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SUNY Geneseo
ENVIRONMENTAL HEALTH & SAFETY

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I. PURPOSE

The State University of New York at Geneseo (SUNY Geneseo) is committed to providing a safe and healthful work environment for our faculty, staff and students. In pursuit of this endeavor, this written program has been developed to provide guidance for employee education and outline procedures for use of respirators as personnel protective equipment. This Respirator Protection Program was developed and revised in accordance with the OSHA Respiratory Protection requirements of 29 CFR §1910.134, §1910.1001, and other associated sections to:

- Ensure that employees of SUNY Geneseo become aware of the potential need for and availability of respiratory protection while performing their job duties
- Provide employees with the necessary training and education needed to recognize when potential hazardous exposures exist
- Properly select the protective equipment
- Properly fit, use, and care for the respiratory protection supplied
- Instruct employees where to address their questions and concerns

II. PERSONNEL AFFECTED

While applicable to all employees of the State University of New York at Geneseo, it is only those employees performing job duties where the potential for exposure to chemical substances or particulates may approach or exceed permissible/recommended exposure limits to which the procedural requirements of this Respiratory Protection Program apply. Portions of this program are also specifically applicable to those employees who choose to voluntarily wear respiratory protection or use a filtering facepiece (dust mask).

III. RESPONSIBILITIES

A. General

It is the responsibility of every SUNY Geneseo employee to notify supervisory personnel or Environmental Health and Safety (EHS) of a work location or activity suspected of exceeding or approaching the OSHA thresholds, or of an activity for which the current respiratory protection seems insufficient.

B. Surveillance of Work Activities

Department chairpersons and/or supervisors are to provide surveillance of work activities and notify EHS, who serves as the Respirator Program Administrator, whenever work conditions, practices or materials are changed which may result in an increased or decreased exposure.

C. Program Review

This program will be reviewed and evaluated on an annual basis by EHS and other appropriate personnel to ensure its effectiveness and to comply with any regulatory revisions. This review will include the following input:

- Department chair and/or supervisor surveillance observations
- Employee input on activities requiring respirator use, including:
 - Respirator fit
 - Respirator selection
 - Respirator use under work conditions
 - Respirator maintenance
- Other pertinent information

IV. PROCEDURES

A. Exposure Determinations

Environmental Health and Safety (EHS), and the individual department heads, chairpersons and supervisors, will identify campus jobs titles, individuals, specific areas, and activities which have the potential for excessive exposure as part of the personnel protective equipment assessment. The following may be utilized in identifying potential exposures:

- Regulatory requirements
- Knowledge of individual job duties and associated activities
- Physical and chemical properties of the hazardous substances involved
- Industrial hygiene sampling and analysis

This assessment may determine that engineering controls or product substitution may eliminate the need for use of respirators. Engineering controls and product substitution are to be considered as the primary option. Use of respirators is restricted to those situations where engineering control and/or product substitution(s) cannot eliminate or only partially eliminate the respiratory hazard.

B. Activities Requiring Respirator Use

The following activities have been identified as those which require the use of respiratory protection.

- Asbestos Abatement (**See also 29 CFR §1910.1001**)
- Painting with Spray Gun or Oil-base Paint (Facilities Services and Scene Shop (exception is when using the spray booth)
- Permit Required Confined Space Entry where required by a hazard assessment
- Pesticide Mixing, when required by product label or MSDS
- Pool acid work directly over or in filter
- Welding indoors
- TB associated activities at Lauderdale Student Health Center or in University Police vehicles, (see also, CDC Guidance, and SUNY Geneseo Exposure Control Plan)

C. Voluntary Use of Respirators

Other activities are conducted at SUNY Geneseo for which employees may choose to wear respirators on a voluntary basis. Employees who choose to wear respirators for these or other activities are subject to the same training and medical evaluation requirements as employees required to wear respirators.

1. Chemistry and Biology activities involving hazardous chemicals as an extra precaution. All activities must be performed in operating fume hoods with hood face closed to the marked limit for 100 cubic feet per minute air flow.
2. Pesticide mixing and applications, when not required by product label or MSDS

In all cases, an exposure assessment must be conducted prior to issuing respirators.

D. Use of Filtering Face pieces

Filtering face pieces or dust masks may also be worn by employees who choose to do so. These employees are not subject to the same training and medical evaluation requirements as those who choose to wear respirators. However, they will be provided a copy of Non-Mandatory Appendix D to 29 CFR 1910.134 (attached).

E. General Procedures for use of Respirators Administrative and Engineering Controls:

- Enclosure or confinement of work area
- Local or general exhaust ventilation
- Substitution of materials
- Changes in work practices

Where alternative procedures or engineering controls are not feasible, or if required by regulation or code (such as with asbestos abatement activities), respiratory protection will be used.

F. Respirator and Cartridge Selection

Only NIOSH certified (42 CFR §84) respirators will be selected for use by employees of SUNY Geneseo. The type of respirator and cartridge used will be based on the hazard posed by the task and user factors that affect respirator performance and reliability. Cartridges for respirators will be selected based on specific contaminant(s) in accordance with applicable regulations and manufacturer's recommendations and personnel are to verify this. Cartridges must not be used longer than the time frames specified below:

Particulate respirators/filters include efficiency ratings of 95%, 99%, or 99.97%, for example the higher the efficiency, the lower the filter leakage. Selection depends on particle size. In addition, there are three particulate respirator series N = NOT resistant to oil, R= Resistant to oil, P= oil proof

Asbestos abatement	(HEPA) P100 up to 5 uses or when inhalation appears problematic, which ever is first
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Paint spraying	P100 + OVA two consecutive days use
Pesticide mixing	P100 + OVA single use not to exceed 8 hours
Work over or in pool filter	Acid gas single use not to exceed 8 hours
Specific chems - science labs	*chemical specific single use not to exceed 8 hours, or manufacturer's specified time limit (formaldehyde = 3 hours, 1,3-Butadiene = 4 hours)
TB**	N-95 single patient
Welding	(HEPA) P100 up to 5 uses or when exhalation appears problematic, which ever is first

*non-mandatory respirator wear.

**Health Center procedures indicate respirator will be placed on patient, UP procedures indicate officer will don respirator.

G. Assigned Protection Factors APFs are numbers that indicate the level of workplace respiratory protection that a respirator or class of respirators is expected to provide to employees when used as part of an effective respirator protection program. The APF table below is provided as a guide in the selection of air purifying, powered air-purifying, supplied air (or airline respirator), and self contained breathing apparatus (SCBA) respirators.

APFs must be used to select the appropriate type of respirator based upon the exposure limit of a contaminant and the level of the contaminant in the workplace. Respirators are selected by comparing the exposure level found in the workplace and the maximum concentration of the contaminant in which a particular type of respirator can be used (the Maximum Use Concentration, or MUC). The MUC is determined by multiplying the respirator's APF by the contaminant's exposure limit. If the workplace level of the contaminant is expected to exceed the respirator's MUC a respirator with a higher APF must be chosen.

Example:

Question: Employees use a respirator with an Assigned Protection Factor (APF) of 10. What would the maximum use concentration be when the hazardous substance has a permissible exposure limit of 50 ug/m³?

Answer: 500 ug/m³ The MUC is determined by multiplying the respirator's APF by the contaminants exposure limit. For example, when the hazardous substance is lead (with a PEL of 50 ug/m³), and the respirator used by employees has an APF of 10, then the calculated MUC is 500 ug/m³ or 0.5 mg/m³ (i.e., 50 ug/m³ x 10). If the level of the contaminant is expected to exceed the MUC, a respirator with a higher APF must be chosen.

Assigned Protection Factors⁵

Type of Respirator ^{1, 2}	Quarter Mask	Half Mask	Full Face piece	Helmet/Hood	Loose-Fitting Facepiece
Air-purifying respirator	5	10 ³	50	----	----
Powered Air-Purifying Respirator (PAPR)	----	50	1,000	25/1,000 ⁴	25
Supplied-Air Respirator (SAR) or Airline Respirator					
➤ Demand Mode	----	10	50	----	----
➤ Continuous flow mode	----	50	1,000	25/1,000 ⁴	25
➤ Pressure-demand or other positive pressure mode	----	50	1,000	----	----
Self-Contained Breathing Apparatus (SCBA)					
➤ Demand Mode	----	10	50	50	----
➤ Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	----	----	10,000	10,000	----

Notes:

¹ Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.

² The assigned protection factors in the table are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.

³ This APF category includes filtering face pieces, and half masks with elastomeric face pieces.

⁴ The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a

workplace protection factor or simulated workplace protection factor study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators, and receive an APF of 25.

⁵ These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

H. Condition of Respirators

To ensure proper protection, prior to each use the user must visually inspect the respirator for any worn, deteriorated or damaged parts which may compromise the effectiveness of the respirator. Damaged or malfunctioning respirators MAY NOT be used until repairs have been made using the replacement part specified to that brand and model respirator and proper operation is restored. Any damaged or inoperative respirators are to be removed from service.

I. Fit-Tests

Prior to using a respirator in a contaminated atmosphere, each employee will either be quantitatively fit tested with a portacount or qualitatively fit-tested using the Saccharine Protocol or Isomyl Acetate or irritant smoke Protocol. Each employee will be fit-tested for each different type, manufacturer, and size of respirator that he or she may use. These qualitative fit-tests will be repeated annually, in response to other identified physical change in the wearer, or if a new respirator is issued. Qualitative fit-test of PAPRs will be conducted with the motor off.

Employees with beard growth, long sideburns, a skull cap, or any other condition that prevents a good face-to face piece seal will not be allowed to use a tight fitting respirator. Such individuals must use the positive pressure loose fitting respiratory protective equipment (PAPR), if available, but only where these devices provide adequate protection. No fit-tests are required for loose-fitting respirators such as hooded PAPRs.

Each time a tight fitting respirator is put on and used, the user will assure a proper self-seal by performing the mandatory procedure in Appendix B-1 to 29 CFR §1910.134. Loose fitting (hood) respirators (PAPRs) are exempt from this requirement.

J. Respirator Cleaning and Storage

After each use, all non-disposable respirators must be cleaned and disinfected. After each use a wipe cleaning will be performed. Respirators are not to be used by more than one individual. Appendix B-1 to 29 CFR §1910.134 outlines mandatory cleaning procedures (attached).

All respirators will be stored in tightly sealed plastic bags or similar containers when not in use to prevent contamination between uses. The sealed containers will then be stored in a clean, dry, sanitary location away from sunlight, and away from stored chemicals or other contaminants.

K. Medical Evaluations

- Since the use of a respirator places stress on the body, all users must be cleared by a Physician or other Licensed Health Care Professional (PLHCP). Appendix C to 29 CFR §1910.134 provides a mandatory questionnaire to aid the PLHCP in this determination.

The PLHCP will be provided the necessary documents, including:

- Completed 29 CFR §1910.134 Appendix C Medical Questionnaire
- Description of the employee's duties, anticipated exposure levels, frequency of task occurrence, and any temperature or humidity extremes
- Description of respiratory equipment and any other PPE to be used
- A copy of this Respiratory Protection Program and 29 CFR §1910.134 and any other applicable regulatory sections (such as 29 CFR §1910.1001 for asbestos team members)

The PLHCP will only provide to the EHS a written recommendation on the wearers' ability to use a respirator, limited to the following:

- any limitations in use
- any need for follow-up medical evaluations
- a statement that the PLHCP has also provided a copy of the recommendation to the wearer.

This medical evaluation is not required to be repeated on an annual basis. *Exception-asbestos team members..* However, the medical questionnaire will need to be completed annually and reviewed by a PLHCP. The need for a repeat medical evaluation will be based upon:

- Wearer reports of medical signs or symptoms
- Determination by a PLHCP, supervisor, or Respiratory Program Administrator
- Respiratory Protection Program observations
- Workplace or task change with physiological effects

L. IDLH and Hazardous Atmospheres

SUNY Geneseo employees are not to enter atmospheres with oxygen deficiencies or enrichment. (<16.0% or >19.5%). If unsure about potential atmospheres, a meter must be used. Employees are similarly prohibited from entering an atmosphere with fumes, mists or gases at levels Immediately Dangerous to Life and Health (IDLH).

M. Chemical breakthrough

If while wearing a respirator an employee notices breakthrough or other indication that the respiratory protection provided by the respirator has been breached, the employee is to leave the work area immediately. Other employees should also exit the work area at that time.

V. Training

All employees whose jobs require the use of respiratory protection and those who voluntarily choose to wear respirators will receive training and must demonstrate knowledge of the following:

- necessity of wearing well fitting and maintained respirator
- respirator limitations and capabilities
- response in malfunctioning or emergency situations
- inspection, maintenance and storage procedures
- recognition of medical signs or symptoms that may limit use
- the general requirements of the applicable OSHA standards

The training portion will include a hands-on-orientation. Each employee must practice the respirator self-seal procedure provided as a mandatory procedures in Appendix B-1 to 29 CFR §1910.134. In addition, employees will be allowed to wear the respirator in clean air for a minimum of 5 minutes to familiarize themselves better with the potential discomforts that may be associated with respirator usage.

VI. RECORDKEEPING

Health Physicals and medical records will be kept on file with HR. Fit testing and training records will be kept on file at EHS.

VII. REFERENCES

OSHA 1910.134 Respiratory Protection
1910.134 App A
1910.134 App B-1
1910.134 App B-2
1910.134 App C
1910.134 App D

VIII. APPENDICES/FORMS

Appendix A- Respirator Fit Test Record
Appendix B- User Seal Check Procedures (Mandatory)
Appendix C- Respirator Cleaning Procedures (Mandatory)
Appendix D- Information for Employees Using Respirators When Not Required Under the Standard (Mandatory)
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IX. REVISION HISTORY

Date	Revision No.	Description

**Appendix A
Record of Respiratory Fit Testing**

SUNY Geneseo

RESPIRATOR FIT TEST RECORD

<u>Employee Name:</u> (Please Print)	<u>Job Title:</u>
Division/Location:	<u>Date:</u> ____/____/____

Respirator Description

<u>Type of Mask:</u> Half /Full Face Mask / Air Purifying Respirator	
<u>Manufacturer:</u>	
<u>Model:</u>	<u>Size:</u>

Test Procedure (circle one)

<u>Positive/Negative</u> <u>Fit Check (circle one)</u>	<u>Irritant Smoke</u>	<u>Isoamyl Acetate</u>	<u>Saccharine/Bitrex</u> <u>Mist</u>	Other (specify)
Pass	Pass	Pass	Pass	Pass
Fail	Fail	Fail	Fail	Fail

Satisfactory completion of a fit-test is indicated above by entering the manufacture's model #, appropriate facepiece size (S: Small, M: Medium, L: Large), and the facepiece/hood/type on the line indicated. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator.

<u>Employee Signature:</u>	<u>Date:</u> ____/____/____
<u>Person Conducting Fit Test Signature:</u>	

Appendix B

User Seal Check Procedures (Mandatory)

The individual who uses a tight-fitting respirator is to perform a user seal check to ensure that an adequate seal is achieved each time the respirator is put on. Either the positive and negative pressure checks listed in this appendix, or the respirator manufacturers recommended user seal check method shall be used. User seal checks are not substitutes for qualitative or quantitative fit tests.

I. Facepiece Positive and/or Negative Pressure Checks

A. Positive pressure check. Close off the exhalation valve and exhale gently into the face piece. The face fit is considered satisfactory if a slight positive pressure can be built up inside the face piece without any evidence of outward leakage of air at the seal. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

B. Negative pressure check. Close off the inlet opening of the canister or cartridge(s) by covering with the palm of the hand(s) or by replacing the filter seal(s), inhale gently so that the face piece collapses slightly, and hold the breath for ten seconds. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand. The test can be performed by covering the inlet opening of the cartridge with a thin latex or nitrile glove. If the face piece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

II. Manufacturer's Recommended User Seal Check Procedures

The respirator manufacturer's recommended procedures for performing a user seal check may be used instead of the positive and/or negative pressure check procedures provided that the employer demonstrates that the manufacturer's procedures are equally effective.

Appendix C 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 face pieces 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 face piece, replacing filters, cartridges, and canisters where necessary.

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

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.

Keep track of your respirator so that you do not mistakenly use someone else's respirator by writing your name on the respirator.

Appendix E

Fit Testing Procedures (Mandatory)

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

- (d) Respirator of proper size to span distance from nose to chin;
- (e) Tendency of respirator to slip;
- (f) Self-observation in mirror to evaluate fit and respirator position.

8. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in Appendix B-1 of 1910.134 or those recommended by the respirator manufacturer which provide equivalent protection to the procedures in Appendix B-1. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths. Another face piece shall be selected and retested if the test subject fails the user seal check tests.

9. The test shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as stubble beard growth, beard, mustache or sideburns which cross the respirator sealing surface. Any type of apparel which interferes with a satisfactory fit shall be altered or removed.

10. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a physician or other licensed health care professional, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.

11. If the employee finds the fit of the respirator unacceptable, the test subject shall be given the opportunity to select a different respirator and to be retested.

12. Exercise regimen. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure. The description of the process shall include a description of the test exercises that the subject will be performing. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

13. The fit test shall be performed while the test subject is wearing any applicable safety equipment that may be worn during actual respirator use which could interfere with respirator fit.

14. Test Exercises.

- (a) Employers must perform the following test exercises:

(1) Normal breathing. In a normal standing position, without talking, the subject shall breathe normally.

(2) Deep breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

(3) Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side. The head shall be held at each extreme momentarily so the subject can inhale at each side.

(4) Moving head up and down. Standing in place, the subject shall slowly move his/her head up and down. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

(5) Talking. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

Rainbow Passage

When the sunlight strikes raindrops in the air, they act like a prism and form a rainbow. The rainbow is a division of white light into many beautiful colors. These take the shape of a long round arch, with its path high above, and its two ends apparently beyond the horizon. There is, according to legend, a boiling pot of 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.

(6) Grimace. The test subject shall grimace by smiling or frowning. **(This applies only to QNFT testing; it is not performed for QLFT)**

(7) Bending over. The test subject shall bend at the waist as if he/she were to touch his/her toes. Jogging in place shall be substituted for this exercise in those test environments such as shroud type QNFT or QLFT units that do not permit bending over at the waist. **Asbestos standard requires jogging in place for this exercise.**

(8) Normal breathing. Same as exercise (1).

(b) Each test exercise shall be performed for one minute except for the grimace exercise which shall be performed for 15 seconds (QNFT only). The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol. If it has become unacceptable, another model of respirator shall be tried. The respirator shall not be adjusted once the fit test exercises begin. Any adjustment voids the test, and the fit test must be repeated.

Saccharin/Bitrex Solution Aerosol Protocol

The entire screening and testing procedure shall be explained to the test subject prior to the conduct of the screening test.

(a) Taste threshold screening. The saccharin/bitrex taste threshold screening, performed without wearing a respirator, is intended to determine whether the individual being tested can detect the taste of saccharin.

- (1) During threshold screening as well as during fit testing, subjects shall wear an enclosure about the head and shoulders that is approximately 12 inches in diameter by 14 inches tall with at least the front portion clear and that allows free movements of the head when a respirator is worn. An enclosure substantially similar to the 3M hood assembly, parts # FT 14 and # FT 15 combined, is adequate.
- (2) The test enclosure shall have a 3/4-inch (1.9 cm) hole in front of the test subject's nose and mouth area to accommodate the nebulizer nozzle.
- (3) The test subject shall don the test enclosure. Throughout the threshold screening test, the test subject shall breathe through his/her slightly open mouth with tongue extended. The subject is instructed to report when he/she detects a sweet taste.
- (4) Using the Allegro Qualitative Respirator Fit test nebulizer #1 (sensitivity) the test conductor shall spray the threshold check solution into the enclosure. The nozzle is directed away from the nose and mouth of the person. This nebulizer shall be clearly marked to distinguish it from the fit test solution nebulizer.
- (5) To produce the aerosol, the nebulizer bulb is firmly squeezed so that it collapses completely, then released and allowed to fully expand.
- (6) Ten squeezes are repeated rapidly and then the test subject is asked whether the saccharin can be tasted. If the test subject reports tasting the sweet taste during the ten squeezes, the screening test is completed. The taste threshold is noted as ten regardless of the number of squeezes actually completed.
- (7) If the first response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the second ten squeezes, the screening test is completed. The taste threshold is noted as twenty regardless of the number of squeezes actually completed.
- (8) If the second response is negative, ten more squeezes are repeated rapidly and the test subject is again asked whether the saccharin is tasted. If the test subject reports tasting the sweet taste during the third set of ten squeezes, the screening test is completed. The taste threshold is noted as thirty regardless of the number of squeezes actually completed.
- (9) The test conductor will take note of the number of squeezes required to solicit a taste response.
- (10) If the saccharin/bitrex is not tasted after 30 squeezes (step 10), the test subject is unable to taste saccharin and may not perform the saccharin fit test.

Note to paragraph 3. (a): If the test subject eats or drinks something sweet before the screening test, he/she may be unable to taste the weak saccharin solution.

(11) If a taste response is elicited, the test subject shall be asked to take note of the taste for reference in the fit test.

(12) Correct use of the nebulizer means that approximately 1 ml of liquid is used at a time in the nebulizer body.

(13) The nebulizer shall be thoroughly rinsed in water, shaken dry and refilled at least each morning and afternoon or at least every four hours.

(b) Saccharin solution aerosol fit test procedure.

(1) The test subject may not eat, drink (except plain water), smoke, or chew gum for 15 minutes before the test.

(2) The fit test uses the same enclosure described in 3. (a) above (saccharin solution aerosol protocol)

(3) The test subject shall don the enclosure while wearing the respirator selected in section I. A. of this appendix. The respirator shall be properly adjusted and equipped with a particulate filter(s).

(4) Allegro Nebulizer #2 (fit test solution) is used to spray the fit test solution into the enclosure. This nebulizer shall be clearly marked to distinguish it from the screening test solution nebulizer.

(5) The fit test solution is prepared by adding 83 grams of sodium saccharin to 100 ml of warm water.

(6) As before, the test subject shall breathe through the slightly open mouth with tongue extended, and report if he/she tastes the sweet taste of saccharin.

(7) The nebulizer is inserted into the hole in the front of the enclosure and an initial concentration of saccharin fit test solution is sprayed into the enclosure using the same number of squeezes (either 10, 20 or 30 squeezes) based on the number of squeezes required to elicit a taste response as noted during the screening test. A minimum of 10 squeezes is required.

(8) After generating the aerosol, the test subject shall be instructed to perform the exercises in section I. A. 14. of this appendix.

(9) Every 30 seconds the aerosol concentration shall be replenished using one half the original number of squeezes used initially (e.g., 5, 10 or 15).

(10) The test subject shall indicate to the test conductor if at any time during the fit test the taste of saccharin is detected. If the test subject does not report tasting the saccharin, the test is passed.

(11) If the taste of saccharin is detected, the fit is deemed unsatisfactory and the test is failed. A different respirator shall be tried and the entire test procedure is repeated (taste threshold screening and fit testing).

(12) Since the nebulizer has a tendency to clog during use, the test operator must make periodic checks of the nebulizer to ensure that it is not clogged. If clogging is found at the end of the test session, the test is invalid.

Cleaning

Immediately after completing the test, unused solutions can be poured into any wastewater treatment system. Rinse the nebulizers with warm water to prevent clogging. Wipe out the inside of the hood with a damp cloth or paper towel to remove any deposited test solution.

Appendix F
OSHA Medical Evaluation Questionnaire (Mandatory)

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):

1 8. 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, and security):

Appendix G Form to Request Occupational Health Exam

 NYS Department of Civil Service Employee Health Service 55 Mohawk Street – Suite 201 Cohoes, NY 12047	Agency Request for Occupational Health Examinations	Reference # _____ EHS-699 (5/06)
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(518) 233-3100 General Information

(518) 233-3131 Fax

PERSON REQUESTING EXAMINATION			
Print Name:		Signature:	
Title:		Telephone #: ()	Fax # ()
Agency Name and Address:			
Agency Code	Cost Center	Division	Preferred Service Location
Agency Payment Coordinator's Name & Address			Telephone # ()
Do you authorize payment for any additional special tests ordered by doctor? Yes <input type="checkbox"/> No <input type="checkbox"/>			
Name of Scheduling Person			Telephone # ()
Exposures	Services	Respirator Type	
<input type="checkbox"/> Solvents <input type="checkbox"/> PCBs <input type="checkbox"/> Asbestos <input type="checkbox"/> Lead <input type="checkbox"/> Pesticides/Herbicides <input type="checkbox"/> Heavy Metals <input type="checkbox"/> Noise <input type="checkbox"/> Other _____	<input type="checkbox"/> TB Testing <input type="checkbox"/> Rabies Vaccine <input type="checkbox"/> Hepatitis B Vaccine <input type="checkbox"/> Other _____ <input type="checkbox"/> Rabies Titer <input type="checkbox"/> Hepatitis B Titer <input type="checkbox"/> Physical Needed <input type="checkbox"/> Physical NOT Needed	<input type="checkbox"/> Particulate Filter Respirator <input type="checkbox"/> Cartridge Filter Respirator <input type="checkbox"/> PAPR <input type="checkbox"/> Supplied Air Respirator <input type="checkbox"/> SCBA <input type="checkbox"/> M-17 Clearance <input type="checkbox"/> All of the Above	
PROCESSING REQUIREMENTS			
FOR EACH REQUEST: Please attach a separate alphabetical listing of the names and social security numbers of employees. Each group of employees should have the same EXPOSURES and/or SERVICES and/or RESPIRATOR TYPE .			
SPECIAL SCHEDULING REQUIREMENTS			
<input type="checkbox"/> AM Only	<input type="checkbox"/> PM Only	How many would you like scheduled each day?	

PLEASE DO NOT WRITE ON THE REVERSE SIDE OF THIS FORM

Appendix H

EHS Procedure for Health Physicals for Asbestos and Respiratory Protection

- The EHS Secretary gets list of personnel who are in the Asbestos/Respiratory Protection Program from Supervisors/EHS.
- The EHS Secretary completes NYS Employee Health Service form EHS-699 “Agency Request for Occupational Health Examination,” sends in to NYS Employee Health Service (address information on the top left side of form). Once NYS Employee Health Service receives the form, they schedule the physicals with Riverfront Medical (Satellite of NYS Employee Health Services).
- EHS receives form 701.3 (results of physical), obtains necessary information, and sends form to HR for record keeping.
- EHS conducts respiratory fit tests for staff that pass the physical.

Contact information:

- Riverfront Medical, Rochester 325-3002
- NYS Employee Health (Dr. Ciulla) “Kim” is the Administrative Assistant who can answer questions regarding any changes Dr. Ciulla makes (518) 233-3100.