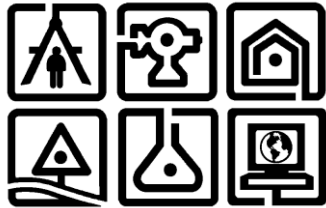


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**Respiratory Protection Program
Union College
Union Street
City of Schenectady
Schenectady County, New York**

Prepared for:

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RESPIRATORY PROTECTION PROGRAM

TABLE OF CONTENTS

	<u>Page</u>
1.0 Respiratory Protection Policy.....	1
1.1 Written Policy	1
1.2 Program Responsibilities:	1
2.0 Respirator Use Procedures	3
2.1 Determining the appropriate level of respiratory protection.....	3
2.1.1 General Requirements.....	3
2.1.2 IDLH Atmospheres - the following will be provided by the employer:	4
2.1.3 Respirators are to be in compliance with all other OSHA requirements	4
2.1.4 Respirator Decision Logic.....	5
2.2 Procedures for Immediately Dangerous to Life (IDLH) Atmospheres.....	5
2.3 Respirator Use	6
2.4 Respirator Fit-Test (each use).....	7
2.5 Respirator Cleaning and Maintenance, Inspections, Storage	7
2.5.1 Steps for Cleaning and Disinfecting Respirators.....	7
2.5.2 Steps for Inspecting Respirators	8
2.5.3 Repairs	8
2.5.4 Storage	9
3.0 Medical Examination.....	10
4.0 Fit testing.....	11
5.0 Training	12
6.0 Record Keeping	13
7.0 Program Evaluation.....	13

APPENDICES

APPENDIX A FIT TESTING PROCEDURES

APPENDIX B RESPIRATOR INSPECTION RECORD

APPENDIX C CARTRIDGE IDENTIFICATION

1.0 RESPIRATORY PROTECTION POLICY

1.1 Written Policy

Union College is committed to the continued health, safety and welfare of its employees. To that end, Union College has prepared the following Respiratory Protection Program (RPP). This RPP contains specific procedures and elements required for employee respirator use.

1.2 Program Responsibilities:

Union College *Management* is responsible to:

Establish a Respiratory Protection Program for its employees who either are required to use respiratory protection as part of their job description or voluntarily use respiratory protection as a personal choice.

- Provide respirators at no charge to employees.
- Provide procedures for the selection of respirators to use in each task or specific work-site.
- Monitor task or work-site for changes that may necessitate changes in levels of respiratory protection.
- Provide medical evaluations for those employees using respirators.
- Implement proper fit testing procedures.
- Provide a procedure and schedule for cleaning, disinfecting, storing, inspecting, repairing, discarding and otherwise maintaining respirators.
- Provide procedures to ensure adequate breathing air quality, quantity and flow for air-supplying respirators.
- Provide training for employees in the proper use of respirators including wearing, fit-testing, maintenance and limitations of usage.
- Develop a procedure to evaluate the effectiveness of the program.

Union College *Employees* are responsible to:

- Understand and comply with all components of the Union College written Respiratory Protection Program.
- Address any parts of the Union College Respiratory Protection Program that the employee does not understand with Union College Management.
- Maintain their respirators in clean, good working order.
- Report any program inconsistencies to Union College Management.
- Comply with all OSHA requirements, as specified in the OSHA Respiratory Protection regulations 29 CFR 1910.134.

2.0 RESPIRATOR USE PROCEDURES

2.1 Determining the appropriate level of respiratory protection

Before requiring employees to enter a work area or perform a job task with potential respiratory hazards, Union College (Department or Employee??) will evaluate the nature and level of said potential respiratory hazards specific to that task. A determination of the appropriate level of respiratory protection will be made based upon this evaluation.

Continued surveillance and reviews shall be maintained of work area conditions and levels of employee exposure to potential hazards. If a change occurs that may affect respirator effectiveness, the employer shall reevaluate the continued effectiveness of the respirator and, if warranted, change the level of respiratory equipment.

2.1.1 General Requirements

- The level of respiratory protection will be based on relevant workplace and user factors.
- Respirators and their cartridges/canisters must be NIOSH-certified and used in compliance with the conditions of its certification
- Respiratory hazards will be identified as follows:
 - ❖ A reasonable estimate of employee exposures (should be based on real data, if available).
 - ❖ The contaminant(s) chemical state and physical form.
 - ❖ If unable to identify or estimate exposure, the exposure shall be considered Immediately Dangerous to Life and/or Health (IDLH) and treated as such.
- Respirator type will be selected according to the NIOSH Respirator Decision Logic table from the “NIOSH Guide to Industrial Respiratory Protection”, Publication No. 87-116.

- For protection against particulates, the employer shall provide:
 - ❖ An atmosphere supplying respirator or;
 - ❖ An air-purifying respirator equipped with a filter certified by NIOSH under 30 CFR part 11 as a high efficiency particulate air (HEPA) filter.

2.1.2 IDLH Atmospheres - the following will be provided by the employer:

- Full-face pressure demand Self Contained Breathing Apparatus (SCBA) certified by NIOSH for a minimum service life of 30 minutes.
- Combination full-face pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply.
- Respirators for escape only from IDLH atmospheres shall be NIOSH approved for that atmosphere.
- All oxygen deficient (less than 19.5% by volume) atmospheres are considered to be IDLH.

2.1.3 Respirators are to be in compliance with all other OSHA requirements

- Assigned Protection Factors (APF)
- Maximum Use Concentration (MUC)
- For protection against gases and vapors the employer shall provide:
 - ❖ An atmosphere supplying respirator or;
 - ❖ An air-purifying respirator, provided that;
 - The respirator is equipped with an end of service life indicator (ESLI) certified by NIOSH.
 - If no ESLI is appropriate then the employer must implement a change of cartridges schedule based on objective information or data.

2.1.4 Respirator Decision Logic

- Where a specific OSHA standard exists. Each task/job having the potential for respiratory hazards will be evaluated to determine worker protection requirements. The specific OSHA standard will be consulted to determine delineated respiratory requirements. The standards are listed in the “Z” tables to 29 CFR 1910.1000-1101.
- Where a specific OSHA standard does not exist. The NIOSH respirator decision logic table from the “NIOSH Guide to Industrial Respiratory Protection”, Publication No. 87-116 will be used. After all criteria have been identified and evaluated and after the requirements and restrictions of the respiratory protection program have been met, the class of respirators that should provide adequate respiratory protection will be determined.

2.2 Procedures for Immediately Dangerous to Life (IDLH) Atmospheres

For all IDLH atmospheres, the employer shall ensure that:

- One employee or, when needed, more than one employee is located outside the IDLH atmosphere at all times.
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH.
- The employee(s) located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue.
- The employer or designee is notified before the employees(s) located outside the IDLH atmosphere enter designated space to provide emergency rescue.
- The employer or designee authorized to do so by the employer, once notified, provides necessary assistance appropriate to the situation.
- Employee(s) located outside the IDLH atmospheres are equipped with:

- ❖ Pressure demand or other positive pressure SCBA's, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either
- ❖ Appropriate retrieval equipment for removing the employee(s) who enter these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry.

2.3 Respirator Use

Union College will take actions to ensure the continued effectiveness of respiratory protection equipment. To do so it must require that the employees who wear respirators will:

- Report any problems to the program administrator or project manager.
- Maintain a cleanly shaved face (or wear respirator type that allows facial hair).
- Leave the respirator use area:
 - ❖ To wash their faces and respirator as necessary to prevent eye or skin irritation.
 - ❖ If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the face-piece.
 - ❖ To replace the respirator or the filter, cartridge, or canister elements.
- If the employee wears glasses, goggles or any other personal protective equipment the employer must ensure that it is worn in a way as to not affect the face-seal.
- Follow the guidelines in this doctrine for inspecting, cleaning and disinfecting, storing, and maintaining the respiratory protection equipment.

2.4 Respirator Fit-Test (each use)

Perform face-piece positive and negative pressure checks before each use as outlined below:

- **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.
- **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 seals. If unable to cover the inlet completely with your hand(s) use a thin piece of latex or nitrile glove. If the face-piece remains in its slightly collapsed condition and no inward leaking is detected, the tightness of the respirator is considered satisfactory.

2.5 Respirator Cleaning and Maintenance, Inspections, Storage

It is the responsibility of the employer to provide procedures, schedules and equipment for the general maintenance required to keep respiratory protection equipment in good working condition. It is the responsibility of the employee to follow the procedures as set forth and to keep their individual respirator clean and in working order. Employees shall clean and inspect respirators before each use. Respirators for emergency use should be cleaned and inspected at least monthly in addition to before each use.

2.5.1 Steps for Cleaning and Disinfecting Respirators

- Remove filters, cartridges, or canisters. Disassemble face-pieces by removing speaking diaphragms, demand and pressure-demand valve assemblies and hoses. Discard or repair any defective parts.
- Wash components in warm (110°F maximum) water with a mild detergent that contains a disinfecting agent. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt. Dried detergents left on respirators can cause irritation to the skin and deteriorate the rubber seals.

- Rinse components thoroughly in clean, warm (110°F maximum), preferably running water. Drain. The importance of thorough rinsing cannot be over emphasized.
- Components should be hand-dried with a clean lint-free cloth or air-dried.
- Reassemble face-piece, replacing filters, cartridges, and canisters where necessary.
- Test the respirator to ensure that all components work properly.

2.5.2 Steps for Inspecting Respirators

- Perform negative and positive pressure check (see respirator use)
- Check tightness of all connections.
- Check the face-piece, head straps, inhalation valve, exhalation valve assembly, cartridge/canister holder, filter, harness assembly, hose assembly, speaking diaphragm, and gaskets.
- Check the elastomeric parts for pliability and signs of deterioration. This can be achieved by gently rubbing the gaskets.
- Certify the respirator is in good working condition by documenting the date the inspection was performed, name and signature of the inspector, the findings, required remedial action, and a serial number or other means of identifying the respirator.
- Respirators that fail any part of the inspection must be removed from service, discarded or repaired following the procedures outlined in part 3 of this section.

2.5.3 Repairs

- Repairs or adjustments to respirators are to be made only by persons appropriately trained to perform such operations and shall use only the respirator manufacturer's NIOSH-approved parts designed for the respirator.

- Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed
- Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

2.5.4 Storage

- Respirators are to be stored as to protect them from physical damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, damaging chemicals.
- In addition to the clause above, emergency use respirators shall be:
 - ❖ Kept accessible to the work area.
 - ❖ Stored in compartments that are clearly marked "for emergency"
 - ❖ Stored in accordance with applicable manufacturers requirements.
- Respirators shall be stored in an area that is readily accessible to the workers required to use them.

3.0 MEDICAL EXAMINATION

Union College will provide evidence that any employee required to use the respirator in a work area or for a specific job task is medically fit.

Union College will identify a physician or licensed health care professional (PLHCP) to perform a medical evaluation using an inappropriate medical questionnaire or other exam that will acquire the same information. The evaluation will acquire information requested in sections 1 and 2, part A of Appendix C of 29 CFR 1910.134. Union College will make sure that a follow up medical exam is given to anyone who answers yes to questions 1 through 8 or whose exam demonstrates a need for a follow-up. Medical questions and the examination results shall be confidential and done in a convenient time and place for the employee. The employee shall have the opportunity to discuss the results of the exam with the PLHCP. The following information will be provided to the PLHCP:

- The type and weight of respirator to be used
- The duration and frequency of respirator use
- The expected physical work effort
- Additional protective equipment to be worn
- Work site conditions that may affect the employees ability to use the respirator
- A written copy of the company's respiratory protection program

Upon completion of the medical examination Union College will obtain from the PLHCP a written recommendation. This document should show any limitations on respirator use related to medical condition, or relating to workplace conditions, if there is a need for a follow-up medical exam, and a statement that the PLHCP has provided the employee with a copy of the PLHCP's written recommendation.

Additional medical evaluations shall be provided by the employer if the employee reports medical signs or symptoms related to his/her ability to use the respirator or the

PLHCP, supervisor, or RPP administrator observes that the employee needs to be reevaluated. Employees' medical ability to wear a respirator will be reevaluated if observations from the fit test or program evaluation warrant it. If changes occur in the workplace itself or in the duties required of the individual medical reevaluation will be required.

4.0 FIT TESTING

All employees required to use a respirator shall be given either a qualitative (QLFT) or quantitative (QNFT) fit test prior to their initial use, with a change in respirator style, employee work load and annually thereafter.

- Additional fit test(s) will be conducted when the employee, supervisor, or program administrator makes visual observation of changes in the employee's physical condition including but not limited to facial scarring, facial hair, dental changes, cosmetic surgery, or obvious change in weight. If after passing a fit test the employee feels the respirator is not working properly then they are given the opportunity to select a new respirator and be given a new fit test. QLFT may only be used for respirators requiring a fit factor of 100 or less. Fit tests shall be administered using OSHA accepted QLFT or QNFT protocols which can be found in Appendix A of 29 CFR 1910.134.

5.0 TRAINING

Union College will provide effective training that is comprehensive, understandable and recurs annually. Any new employees will be trained prior to respirator usage. The employer will ensure that the employee understands the following before donning a respirator in the workplace.

- Concepts employees are required to understand:
 - ❖ Why respirator use 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, put on 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
 - ❖ General requirements of this section.
- Training shall be conducted in a manner understandable to the employee.
- Retraining shall be administered annually and when the following situations occur:
 - ❖ Changes in the work place or type of respirator.
 - ❖ Inadequacies in the employees knowledge or use shows evidence that he has not retained the knowledge required in this section.

6.0 RECORD KEEPING

- Medical Evaluations. Medical evaluations required by this RPP will be retained and made available in accordance with 29 CFR 1910.1020. Medical records shall be kept on file for the duration of employment plus thirty years.
- Fit Testing. Union College shall establish a record of the qualitative and quantitative fit tests administered to employees including: the name of the employee, type of fit test performed, specific make, model, style, and size of respirator tested, the date tested and the pass/fail results for QLFT's and the fit factor and strip chart recording or other recording of the test results for QNFT's. The fit test record will be retained until the next fit test is administered.
- The company shall retain a written copy of the current respiratory protection program.
- Written materials required to be retained under this paragraph shall be made available upon request to affected employees for examination and copying within a reasonable amount of time.

7.0 PROGRAM EVALUATION

- Union College will review the Respiratory Protection program on an annual basis to ensure the continued effectiveness of the policy and compliance with procedures.
- The program will be updated, as needed, to reflect any changes in the program.

APPENDIX A
FIT TESTING PROCEDURES

Fit Testing Procedures (Standards - 29 CFR 1910.134 App A)

1. **Qualitative Fit Test.** Most of the work required of Union College's employees can be safely performed using a respirator with a fit factor of 100. If it is determined that a fit factor of more than 100 is required then a QNFT must be performed in accordance with Appendix A of 29 CFR 1910.134.
2. **Irritant Smoke (Stannic Chloride) Protocol:** This is a QLFT that uses a person's response to the irritating chemicals released in the smoke to detect leakage into the respirator. The smoke can be irritating to the eyes, lungs, and nasal passages. Be sure to perform the test in a well ventilated area as to not expose the tester. Take precautions to minimize the test subject's exposure to irritant smoke. Sensitivity to the smoke varies and some people will show no reaction at all to it. Therefore it is important to do a sensitivity screening first.

To do this first break both ends of the ventilation smoke tube. Attach the aspirator squeeze bulb to one end and cover the other end with a small piece of tubing (to prevent potential injury from the jagged edge). Instruct the test subject to close his eyes and breathe normally. Allow the subject to smell a weak concentration of the smoke. If the test subject is unable to detect the smoke then another type of fit test must be performed (See Appendix A). If the test subject is able to detect the irritant smoke then proceed with the test.

- a. Allow the test subject to select a respirator from a number of respirator models, styles and sizes.
- b. Have him/her try on different ones to find the one that is most comfortable and gives the best fit. A good fitting respirator will have adequate tension in the straps without being overly tightened, the seal will fit across the bridge of the nose, the respirator face-piece will span the distance from the nose to the chin and it will not have a tendency to slip while moving the head up and down and from left to right.
- c. Have the test subject wear the respirator that gives the best fit. Instruct him to "seat" the mask by moving the head side to side and up and down slowly whilst taking deep breathes.

- d. Discontinue the test if there is any hair or other impediments between the skin and the seal.
- e. Have the test subject perform a negative/positive pressure seal check first (as described in respirator use section). If it fails have the subject begin the selection process over until a good fitting respirator is found.
- f. Explain to the test subject what is expected of him during the test.
- g. Begin 12" from the subjects face and start directing the smoke around the perimeter of the face-seal. Make two more passes gradually getting to within 6" of the test subjects face-seal. If there is no involuntary response or detection of the irritant smoke continue with the test.
- h. Test exercises. These exercises are designed to simulate motions one would go through in a work situation. Have the subject do them each for 1 minute, all the while continuing to test the seal with the irritant smoke.
 - i. Normal Breathing. In a normal standing position, without talking, the subject shall breathe normally.
 - ii. Deep Breathing. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.
 - iii. Turning head side to side. Standing in place, the subject shall slowly turn his/her head from side to side, inhaling at each extreme.
 - iv. Moving head up and down and inhaling at each extreme.
 - v. Talking. Counting from 1 to 100 the subject should be speaking loud enough to be heard and understood by the person conducting the test.
 - vi. Have the subject bend at the waist as if he were touching his toes.
- i. After performing the test ask the subject about the fit and comfort of the respirator. If he/she feels that the comfort and fit is good and there was no involuntary response or detection of the irritant smoke during the test then the respirator has passed the qualitative fit test.

- j. Record the results. Be sure to include in your records: the name of the employee; the type of fit test performed; the specific make, model, style and size of the respirator tested; date of the test; pass/fail results of the qualitative fit test.

APPENDIX B
RESPIRATOR INSPECTION RECORD

RESPIRATOR INSPECTION RECORD.

1. Owner of Respirator: _____

2. Make, Model and Size: _____

3. Serial #: _____

4. Inspection Checklist.

A. Face-piece: _____

B. Head straps: _____

C. Inhalation Valve: _____

D. Exhalation Valve: _____

E. Cartridge/Canister Holder: _____

F. Filter: _____

G. Harness Assembly: _____

H. Hose Assembly: _____

I. Speaking Diaphragm: _____

J. Gaskets: _____

K. Tightness of All Connections: _____

L. Neg/Pos Pressure Test: Pass/Fail

M. Other

Defects: _____

APPENDIX C
CARTRIDGE IDENTIFICATION

C.T. MALE ASSOCIATES

The primary means of identifying a chemical cartridge is by means of labels. The secondary means is by a color code. All cartridges used by this company will be properly labeled and or color coded before they are placed in service. The labels and colors will be properly maintained at all times until disposal. To determine the type of cartridge:

ATMOSPHERIC CONTAMINANTS	COLORS ASSIGNED
Acid Gases	White
Hydrocyanic Acid Gasoline	White w/green stripe around bottom
Chlorine Gasoline	White w/yellow stripe around bottom
Organic Vapors	Black
Ammonia Gasoline	Green
Acid Gases and Ammonia Gasoline	Green w/white stripe around bottom
Carbon Monoxide	Blue
Acid Gases and Organic Vapors	Yellow
Hydrocyanic Acid Gases and Chloropicrin Vapor	Yellow w/blue stripe around bottom
Acid Gases, Organic Vapors and Ammonia Gases	Brown
Radioactive Materials except Tritium and Noble Gases	Purple (Magenta)
Particulates (dusts, fumes, mists, fogs or smokes) in combination with any of the gases or vapors	Purple (Magenta) with grey stripe around top
All of the above Atmospheric Contaminants	Red with ½ inch grey stripe around the top