

RESPIRATORY PROTECTION PROGRAM

Purpose

1. The City of Portage has determined that employees at the Department of Public Works, Water Utility and the Wastewater Treatment and Fire Department are exposed to respiratory hazards during routine operations.
2. These hazards may include:
 - Chlorine gas
 - Ferric sulfate
 - Fluorosilicic acid
 - Potassium permanganate
 - Sulfur dioxide
 - Sandblasting
 - Welding fumes
 - Sewer gases
 - Smoke
 - Decomposition products
3. The purpose of this program is to ensure that the City of Portage employees are protected from exposure to these respiratory hazards.
4. Engineering controls, such as ventilation and substitution of less toxic materials, are the first line of defense at the City of Portage; however, engineering controls have not always been feasible for some of our operations, or have not always completely controlled the identified hazards. In these situations, respirators, and other protective equipment must be used.
5. Respirators are also needed to protect employee's health during emergencies.

Scope

1. This program applies to all employees who are required to wear respirators during normal work operations, and during some non-routine or emergency operations such as a spill of a hazardous substance.
2. Any employee who voluntarily wears a respirator when a respirator is not required (i.e.: in certain maintenance operations) is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program.
3. Voluntary dust mask users are only required to be.
4. Employees participating in the respiratory protection program do so at no cost to them.
 - The expense associated with training, medical evaluations, and respiratory protection equipment shall be borne by the City of Portage.
5. The following is a list of the type of respirator and task where respirators will be used:

Responsibilities of Program Administrator

1. The Program Administrator shall be qualified and is responsible for administering the respiratory protection program.
 - The Safety Coordinator shall serve as the Program Administrator for the City of Portage.
2. Duties of the Program Administrator shall be the oversight of implementation of this program at department levels.

3. Departmental implementation shall be implemented by designated coordinators. DPW Supervisor, Wastewater Dept. Supervisor, Water Department Supervisor, Park and Rec. Manager, and Fire Department Safety Coordinator.
4. Program maintenance responsibilities:
 - Identifying work areas, processes, or tasks that require workers to wear respirators and evaluating hazards.
 - Selection of respiratory protection options.
 - 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.
 - Conducting qualitative fit testing.
 - Administering the medical surveillance program.
 - Maintaining records required by the program.
 - Evaluating the program.
 - Updating written program, as needed.

Duties of Supervisors

1. If a supervisor is assigned to respirator wearer's, the supervisor will be responsible for ensuring that the respiratory protection program is implemented in their particular areas.
 - To be knowledgeable about the program requirements for their own protection.
 - Supervisors must also ensure that the program is understood and followed by the employees under their charge.
2. Duties of the assigned supervisor include:
 - Ensuring that employees under their supervision (including new hires) have received appropriate training, fit testing and annual medical evaluation.
 - Ensuring the availability of appropriate respirators and accessories.
 - Being aware of tasks requiring the use of respiratory protection.
 - Enforcing the proper use of respiratory protection when necessary.
 - Ensuring the respirators are properly cleaned, maintained, and stored according to the respirator's protection plan.
 - Continually monitoring work areas and operations to identify respiratory hazards.
 - Coordinating with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

Duties of Employees

1. Each employee has the responsibility to wear his or her respirator when and where required and in the manner in which they were trained.
2. Employees must also:
 - Care for and maintain their respirators as instructed, and store them in a clean sanitary location.
 - Inform their supervisor if the respirator no longer fits well, and requests 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.

Hazard Assessment Procedures:

The Program Administrator will assist the department coordinator as needed with the following tasks:

1. Will conduct a hazard evaluation for each operation, process, or work area where airborne contaminants may be present in routine operations or during an emergency.
2. The hazard evaluation will include:
 - Identification and development of a list of hazardous substances used in the workplace, by department, or work process.
 - Review of work processes to determine where potential exposures to these hazardous substances may occur.
 - a. This review shall be conducted by surveying the workplace, reviewing process record, and talking with employees and supervisors.
 - Exposure monitoring to quantify potential hazardous exposures
 - a. Monitoring will be conducted by either the insurance company or the Program Administrator.
3. Completed assessment for:
 - DPW and Park and Recreation
 - Wastewater
 - Water Department
 - Fire Department

Chlorine Gas: Ventilation controls will be used, which will include mechanical ventilation. When controls are not adequate, a full-facepiece air-purifying respirator with chlorine filter will be used when changing tanks. Because of potential IDLH conditions, employees responding to a leak must wear a self-contained breathing apparatus (SCBA), positive pressure or supplied-air respirator, pressure demand, with auxiliary SCBA during the performance of this task.

Ferric Sulfate: Ventilation controls will be used, which will include mechanical ventilation. Because of potential IDLH conditions, employees responding to a leak or spill must wear SCBA, positive pressure or supplied-air respirator, pressure demand, with auxiliary SCBA during the performance of this task.

Fluorosilicic Acid: Ventilation controls will be used, which will include mechanical ventilation. When controls are not adequate, a full-facepiece, air-purifying respirator with acid gas cartridge will be used when handling containers. Because of potential IDLH conditions, employees responding to a leak must wear SCBA, positive pressure or supplied-air respirator, pressure demand, with auxiliary SCBA during the performance of this task.

Potassium Permanganate: Ventilation controls will be used, which will include mechanical ventilation. Because of potential IDLH conditions, employees responding to a spill must wear SCBA, positive pressure or supplied-air respirator, pressure demand, with auxiliary SCBA during the performance of this task.

Sulfur Dioxide: Ventilation controls will be used, which will include mechanical ventilation. Because of potential exposure limits being exceeded, employees responding to a spill must wear SCBA, positive pressure or supplied-air respirator, pressure demand, with auxiliary SCBA during the performance of this task.

Sandblasting: Because of eye, face, and respiratory hazards when sandblasting, a supplied-air abrasive blasting hood will be used. (SILICA) and surface materials.

Cement Cutting: Because of eye, face, and respiratory hazards when cutting a respirator will be used. For protection of (Silica) and surface materials. Try to cut upwind at all times.

Welding Fumes: Ventilation controls will be used, which will include portable mechanical ventilation. When controls are not adequate, a full-facepiece air-purifying respirator with organic vapor high-efficiency particulate filter will be worn.

Sewer Gases: Ventilation controls will be used, which will include mechanical ventilation. When controls are not adequate, a positive pressure or supplied-air respirator, pressure demand, with auxiliary SCBA during the performance of this task will be used. Entry into confined spaces will not be permitted when flammable gases reach 10 % LEL.

Confined Space Rescue: Rescue operations in confined spaces will require supplied-air respirators, pressure demand, with auxiliary SCBA until it is confirmed the air quality is safe.

Updating the Hazard Assessment

1. The department coordinator must revise and update the hazard assessment as needed (i.e.: anytime work process changes may potentially affect exposure).
 - If an employee feels that respiratory protection is needed during a particular activity, he/she is to contact the department coordinator.
 - The department coordinator will evaluate the potential hazard, arranging for outside assistance as necessary.
 - The department coordinator will then communicate the results of that assessment back to the employees.
2. An annual review will be conducted with the Program Administrator on site:
 - Every March DPW
 - Every April Water Department
 - Every May Wastewater Department
 - Every June Park and Recreation

Respirator Selection:

1. 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.
 - All filter, 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.
2. Utilizing the hazard assessment:
 - a reasonable estimate of an employee exposure
 - Identify the physical formA protective respirator shall be selected and identified using the appropriate Hazard Assessment Chart for their department.
3. Where employee exposure has potential to exceed exposure limits and the respirator has a filtering media/cartridge a change out schedule shall be developed utilizing table 3.
4. The will work with the departments to select respirators to be used on site, based on the hazards and conditions to which workers are exposed and in accordance with all OSHA standards.

Air Quality

1. For supplied-air respirators:

1910.134(i)(4) The employer shall ensure that cylinders used to supply breathing air to respirators meet the following requirements:

(4)(i) Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 173 and part 178);

(4)(ii) Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air; and

(4)(iii) The moisture content in the cylinder does not exceed a dew point of -50 deg.F (-45.6 deg.C) at 1 atmosphere pressure.

i)(7) For oil-lubricated compressors, the employer shall use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

2. The Program Administrator will coordinate deliveries of compressed air with the City of Portage Fire Department and require them to certify that the air in the cylinders meets the specifications of Grade D breathing air.
3. The Program Administrator will maintain a minimum air supply of one fully charge cylinder for each SAR unit.
 - Back up cylinders can be obtained from the City of Portage Fire Department.

Voluntary Respirator Use

1. The City of Portage will provide respirators at no charge to employees for voluntary use.
 - This will include particulate respirators for sanding, blowing straw, and cleaning floors.
2. The Program Administrator will provide all employees who voluntarily choose to wear a respirator with a copy of Appendix D of the standard.
3. The Program Administrator shall authorize voluntary use of respiratory protective equipment as required by all other workers on a case-by-case basis, depending on specific workplace conditions, and the results of the medical evaluations.

Medical Evaluation

1. With the exception of voluntary dust mask users, employees who are either required to wear respirators or choose to wear a respirator voluntarily must pass a medical evaluation before being permitted to wear a respirator on the job.
2. Employees are not permitted to wear respirators until a physician has determined that they are medically able to do so.
3. Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.
4. A licensed physician at Medivan Inc.4953 South Packard Ave. Cudahy, WI. 53110 (414) 483-4991, will be performing a review of all medical evaluations.
5. Medical evaluation procedures are as follows:

- The medical evaluation will be conducted using the questionnaire provided by the physician, which is from the respiratory protection standard.
- The Program Administrator will provide a copy of this questionnaire to all employees requiring medical evaluations.
- The City of Portage will provide the Medical examiner with the type and weight of respirator to be used.
- Their clearance will include a statement the Medical examiner has provided the employee with a copy of the physicians written recommendations.
- To the extent feasible, the physician will assist employees who are unable to read the questionnaire (by providing help in reading the questionnaire).
- All affected employees will be given a copy of the medical questionnaire to fill out and bring back in a sealed envelope no later than four days prior to appointment.
- Employees will be permitted to fill out the questionnaire on employer time.
- Follow up medical exams will be granted to employees as required by the standard, and/or as deemed necessary by the physician.
- All employees will be granted the opportunity to speak with the physician about their medical evaluation, if they so request.
- This program, a copy of the Respiratory Protection Standard, the list of hazardous substances by work area, and for each employee requiring evaluation; his/her work area or job title, proposed respirator type and weight, length of time required to wear respirator, expected physical work load (light, moderate, or heavy), potential temperature and humidity extremes, and any additional protective clothing required will be given to the physician.
- Any employees required, for medical reasons, to wear a positive pressure air-purifying respirator will be provided with a powered air-purifying respirator.
- After an employee has received clearance and begun to wear his/her respirator, additional medical evaluations will be provided under the following circumstances.
 - a. Employee reports, signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
 - b. The physician or supervisor informs the Department Coordinator that the employee needs to be re-evaluated.
 - c. Information from this program, including observations made during fit testing and program evaluation, indicates a need for re-evaluation.
 - d. A change occurs in workplace conditions that may result in an increased physiological burden on the employee.
- All examinations and questionnaires are to remain confidential between the employee and the physician for a 30 years + duration of employment (Unless <1 year)
- Upon completion of the departments medical evaluation the department coordinator shall give a report to the program administrator. See appendix 7

Fit Testing

1. Fit testing will be required for employees wearing tight fitting facepiece respirators.
 - Fit testing will be required:
 - a. Prior to be allowed to wear any respirator with a tight fitting facepiece.
 - b. Annually.

- c. When there are changes in the employee's physical condition that could affect respiratory fit (i.e.: obvious change in body weight, facial scarring, etc.).
2. Employees will be fit tested with the make, model, and size of respirator that they will actually wear.
3. Employees will be provided with several models and sizes of respirators so that they find an optimal fit.
4. A City of Portage Fire Department employee will conduct fit tests following OSHA 29 CFR 1910.134 for qualitative fit testing of the Respiratory Protection Standard.
5. Employees **required** to wear respirators shall not have facial hair or any conditions that interfere with face to facepiece seal or valve function.
6. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.
7. Employees are not permitted to wear tight-fitting respirators if they have any condition, such as facial scars, facial hair, or missing dentures, that prevents them from achieving a good seal.

General Use Procedures

1. Employees will use their respirators under conditions specified in table 1, and in accordance with the training they receive on the use of each particular model.
2. The respirator shall not be used in a manner for which it is not certified by NIOSH or by its manufacturer.
3. Employees shall put on and take off respirator outside of exposure area.
4. All employees shall conduct user seal checks each time that they wear their respirator.
 - Employees shall use either the positive or negative pressure check (depending on which test works best for them) specified in Appendix B-1 of the Respiratory Protection Standard.
5. All employees shall be permitted to leave the work area to go to a clean area to maintain their respirator for the following reasons:
 - To clean their respirator if the respirator is impeding their ability to work.
 - Change filters or cartridges.
 - Replace parts.
 - To inspect respirator if it stops functioning as intended.

Respirator Malfunction

1. APR Respirator Malfunction
 - For any malfunction of a respirator (i.e.: breakthrough, facepiece leakage, or improperly working valve, leaking hose), the respirator wearer should inform his/her Department coordinator that the respirator no longer functions as intended, and go to the designated safe area to maintain the respirator.
 - The department coordinator must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

IDLH Procedures

1. The Program Administrator has identified the following areas as presenting the potential for IDLH conditions:
 - Chlorine leak repairs.
 - Ferric Sulfate (conditions that create it)
 - Fluorosilicic acid leak repairs
 - Potassium permanganate spills
 - Sulfur dioxide (conditions that create it)
 - Permit-required confined spaces – rescues and when IDLH levels are exceeded.
2. Standby personnel remain outside the IDLH atmosphere.
 - They must be available, trained, and equipped to assist respirator users inside the IDLH atmosphere, and to provide effective emergency rescue when needed.
3. In such cases as confined spaces, workers will follow the permit-required confined space entry procedures specified in the City of Portage's Permit-Required Confined Space Entry Program. As specified in these procedures, the Program Administrator has determined that workers entering this area shall wear a pressure demand SAR with an escape SCBA. In addition, an appropriately trained and equipped standby person shall remain outside the IDLH area and maintain constant voice and visual communication with the worker. In the event of an emergency requiring the stand by person to enter the IDLH environment, the standby person shall immediately notify the Program Administrator and will proceed with rescue operations in accordance with rescue procedures outlined in the City of Portage's Permit-Required Confined Space Entry Program.

Cleaning, Maintenance, Change Schedules, and Storage

1. Respirators are to be regularly cleaned and disinfected.
 - Respirators issued for the exclusive use of an employee shall be cleaned as often as necessary after each use and after training.
 - If the respirator is used by more than one employee, the respirator must be cleaned and disinfected before being used by the employee.
2. Atmosphere supplying and emergency use respirators are to be cleaned and disinfected after each use.
3. The following procedure is to be used when cleaning and disinfecting respirators:
 - Disassemble respirator, removing any filters, canisters, or cartridges.
 - Wash the facepiece and associated parts in a mild detergent and disinfectant recommended by the manufacturer with warm water.
 - a. Do not use organic solvents
 - Rinse completely in clean warm water
 - Air dry in a clean area
 - Reassemble the respirator and replace any defective parts
 - Place in a clean, dry plastic bag or other air tight container
4. The Department coordinator will ensure an adequate supply of appropriate cleaning and disinfection material at the cleaning station.
 - If supplies are low, employees should contact their Department coordinator, who will take care of.
5. Respirators are to be properly maintained at all times in order to ensure that they function properly and adequately protect the employee.
6. No components will be replaced or repairs made beyond those recommended by the manufacturer.

7. Repairs to regulators or alarms of atmosphere-supplying respirators will be conducted by the manufacturer.
8. The following checklist will be used when inspecting respirators.

Facepiece:

- Cracks, tears, or holes
- Facemask distortion
- Cracked or loose lenses/face shield

Headstraps:

- Breaks or tears
- Broken buckles

Valves:

- Residue or dirt
- Cracks or tears in valve material

Filters/Cartridges:

- Approval designation
- Gaskets
- Cracks or dents in housing
- Proper cartridge for hazard

Air Supply Systems:

- Breathing air quality/grade
 - Condition of supply hoses
 - Hose connections
 - Setting on regulators and valves
9. Employees are permitted to leave their work area to perform limited maintenance on their respirator in a designated area that is free of respiratory hazards.
 - Situations when this is permitted include washing their face and respirator facepiece to prevent any eye or skin irritation and if they detect vapor or gas breakthrough or leakage in the facepiece or if they detect any other damage to the respirator or its components.
 10. Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations.
 11. Each employee will clean and inspect their own air-purifying respirator in accordance with the provisions of this program and will store their respirator in a plastic bag in their own locker.
 12. Each employee will have his/her name on the bag and that bag will only be used to store that employee's respirator.
 13. Atmosphere supplying respirators will be stored in the following areas and maintenance of these are the responsibility of the department coordinator.
 - Well #3
 - Well #6
 - Well #7
 - Well #8 lab
 - RBC Control Room, Plant

Defective Respirators

1. Respirators that are defective or have defective parts shall be taken out of service immediately.
2. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of the Department Coordinator.
 - The Department Coordinator will decide whether to:
 - a. Temporarily take the respirator out of service until it can be repaired.
 - b. Perform a simple fix on the spot such as replacing a head strap.
 - c. Dispose of the respirator due to an irreparable problem or defect.
3. When a respirator is taken out of service for an extended period of time, the respirator will be tagged out of service, and the employee will be given a replacement of similar make, model, and size.
4. All tagged out respirators will be kept in the Department Coordinator's office.

Training

1. The Department Coordinator will provide training to respirator users on the contents of the City of Portage's Respiratory Protection Program and their responsibilities under it, and on the OSHA Respiratory Protection Standard.
2. Workers will be trained prior to using a respirator in the workplace.
3. The department coordinator will also be trained prior to using a respirator in the workplace, or prior to supervising employees that must wear respirators.
4. The training course will cover the following topics:
 - City of Portage Respiratory Protection Program.
 - OSHA Respiratory Protection Standard
 - Why the respirator is necessary and how proper fit, usage, or maintenance can compromise the protective effect of the respirator
 - Proper selection and use of respirators.
 - Limitations and capabilities of respirators
 - Respirator donning and doffing
 - User seal (fit) checks
 - How to inspect the respirator.
 - Fit testing
 - Emergency use procedures including malfunctions.
 - Maintenance and storage
 - Medical signs and symptoms limiting the effective use of respirators.
5. Employees will be retrained annually or as needed (i.e.: if they change departments and need to use a different respirator).
6. Respirator training will be documented by the Department Coordinator and the documentation will include the type, model, and size of respirator for which each employee has been trained and fit tested.
7. Copy of the documentation will be sent to the Program Administrator.

Program Evaluation

1. The Program Administrator will conduct periodic evaluations of the workplace to ensure that the provisions of this program are being implemented.
2. The evaluations will include regular consultations with employees who use respirators and their supervisors, site inspections, air monitoring, and a review of records.

3. Problems identified will be noted in an inspection log and addressed by the Department Coordinator.
4. These findings will be reported to the City of Portage Safety Committee, and the report will list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

Documentation and Recordkeeping

1. A written copy of this program and the OSHA standards is kept in the Program Administrator's office and is available to all employees who wish to review it.
 - Also maintained are copies of training and fit test records. (Most recent)
 - Records will include:
 - The name or identification of the employee tested.
 - The type of fit test performed.
 - Specific make, model, style, and size of respirator tested.
 - Date of test
 - The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs.
2. The City Administrator shall maintain copies of the medical records for all employees covered under the respirator program for 30 years + duration of employment unless < 1 year.
 - The completed medical questionnaire and the physician's documented findings are confidential and shall remain at the physician's office at Medivan Inc. 4953 South Packard Ave. Cudahy, WI. 53110 (414) 483-4991.
 - The Program Administrator will only retain the physician's written recommendation regarding each employee's ability to wear a respirator.