City of Newport News

Respiratory Protection Program

29 CFR 1910.134

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I. PURPOSE

The City of Newport News recognizes its responsibility to protect the respiratory health of employees performing hazardous tasks that require respiratory protection. To protect employee safety and health and reduce the risks associated with breathing contaminated air, the City of Newport News shall take the necessary precautions to protect employees working in potentially hazardous environments where respiratory protection is required. The purpose of this program is to ensure that all employees of the City of Newport News are protected from exposure to respiratory hazards in the workplace.

II. SCOPE

This program is to be implemented for all employees of the City of Newport News who are required to wear respirators during normal work operations. Employees who voluntarily wear a respirator when respiratory protection is not required are subject to some but not all elements of this program; requirements for these employees are outlined in each applicable section of the program. Employees who voluntarily wear filtering facepieces (dust masks) are not subject to the medical evaluation, cleaning, storage and maintenance provisions of this program.

This shall serve as the general Respiratory Protection Program for the City of Newport News. Employees can request copies of the program from the Safety Program Administrator, 700 Town Center Drive, Suite 200, Newport News, VA 23606.

III. REFERENCES

This policy is put in place to meet or surpass all requirements set forth in the Occupational Safety and Health Standards, **29 CFR 1910.134** Respiratory Protection.

IV. DEFINITIONS

"Abrasive blasting respirator" is a respirator constructed so that it covers the wearer's head, neck and shoulders to protect him/her from rebounding abrasive.

"Air-purifying respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

"Assigned protector factor (APF)" means the workplace level of respiratory protection that a respirator or class of respirators is expected to provide to employees.

"Atmosphere-supplying respirator" means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

"Canister" or **"Cartridge"** means a container with a filter, sorbent or catalyst, or combination of these items, which removes specific contaminants from the air passed through the container.

"Demand respirator" means an atmosphere-supplying respirator that admits breathing air to the facepiece only when a negative pressure is created inside the facepiece by inhalation.

"Emergency situation" means any occurrence such as, but not limited to, equipment failure, rupture of containers, or failure of control equipment that may or does result in an uncontrolled significant release of an airborne contaminant.

"Employee exposure" means exposure to a concentration of an airborne contaminant that would occur if the employee were not using respiratory protection.

"End-of-service-life indicator (ESLI)" means a system that warns the respirator user of the approach of the end of adequate respiratory protection.

"Escape-only respirator" means a respirator intended to be used only for emergency exit.

"Filter or air-purifying element" means a component used in respirators to remove solid or liquid aerosols from the inspired air.

"Filtering facepiece (dust mask)" means a negative pressure particulate respirator with a filter as an integral part of the facepiece or with the entire facepiece composed of the filtering medium.

"Fit factor" means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

"High efficiency particulate air (HEPA) filter" means a filter that is at least 99.97% efficient in removing monodisperse particles of 0.3 micrometers in diameter. The equivalent NIOSH 42 CFR 84 particulate filters are the N100, R100 and P100 filters.

"Immediately dangerous to life or health (IDLH)" means an atmosphere that poses an immediate threat to life, would cause irreversible adverse health effects or would impair an individual's ability to escape from a dangerous atmosphere.

"Interior structural firefighting" means the physical activity of fire suppression, rescue or both, inside of buildings or enclosed structures which are involved in a fire situation beyond the incipient stage.

"Negative pressure respirator" means a respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

"Oxygen deficient atmosphere" means an atmosphere with oxygen content below 19.5% by volume.

"Particulate-filter respirator" is an air-purifying respirator, commonly referred to as a dust of a fume respirator which removes most of the dust or fume from the air passing through the device.

"Physician or other licensed health care professional (PLHCP)" means an individual whose legally permitted scope of practice allows him/her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required in 29 CFR 1910.134(e).

"Positive pressure respirator" means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

"Powered air-purifying respirator (PAPR)" means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

"Pressure demand respirator" means a positive pressure atmosphere-supplying respirator that admits breathing air to the facepiece when the positive pressure is reduced inside the facepiece by inhalation.

"Qualitative fit test (QLFT)" means a pass/fail test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

"Quantitative fit test (QNFT)" means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

"Self-contained breathing apparatus (SCBA)" means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

"Service life" means the period of time that a respirator, filter or sorbent, or other respiratory equipment provides adequate protection to the wearer.

"Supplied-air respirator (SAR)" or **"airline respirator"** means an atmosphere supplying respirator for which the source of breathing air is not designed to be carried by the user.

"Tight-fitting facepiece" means a respiratory inlet covering that forms a complete seal with the face.

"User seal check" means an action conducted by the respirator user to determine if the respirator is properly seated to the face.

"Voluntary" means by choice, not because of a specific regulatory requirement.

V. RESPONSIBILITIES

A. Department Directors

1. Shall designate a Program Administrator for their department's Respirator Program who is qualified by appropriate training or experience that is commensurate with the complexity of the program.

B. Departmental Program Administrator

The Program Administrator is responsible for administering and overseeing the Respiratory Protection Program. These individuals shall:

1. Have the training or experience to recognize, evaluate and control respiratory hazards in the workplace.
2. Administer or oversee the respiratory protection program and conduct the required evaluations of program effectiveness.
3. Identify work areas, processes or tasks that require workers to wear respirators and evaluate associated hazards.
4. Select a variety of respiratory protection options for employees included in the program.
5. Monitor respirator use to ensure that respirators are used in accordance with their certifications.
6. Arrange for and/or conduct training.
7. Ensure proper storage and maintenance of respirator protective equipment in conjunction with departmental supervisors.
8. Arrange and/or conduct fit testing.
9. Administer the medical surveillance program in conjunction with the Medical Services Program Coordinator by providing the MSPC with the names of employees who require a medical evaluation.
10. Maintain records required by the program.
11. Evaluate the program annually and update if deemed necessary.

C. Departmental Supervisors

Supervisors are responsible for ensuring that the Respiratory Protection Program is implemented in their particular work areas. In addition to being 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. These individuals shall:

1. Ensure that employees under their supervision (including new hires) have been trained, fit tested and medically evaluated prior to wearing a respirator in the workplace.
2. Ensure the availability of appropriate respirators and accessories.
3. Be aware of all tasks requiring the use of respiratory protection in their work area.
4. Enforce the proper use of respirators when necessary.
5. Ensure proper cleaning, maintenance and storage as required by the program.
6. Continually monitor work areas and operations to identify respiratory hazards.
7. Coordinate with the Program Administrator on how to address respiratory hazards or other concerns regarding the program.

D. Employees

Employees of the City of Newport News are responsible for wearing their respirator when and where required and in the manner in which they were trained. Employees must also:

1. Care for and maintain respirators as instructed and store respirators in a clean, sanitary location.
2. Inform their supervisor if the respirator no longer fits well and request a new one that fits properly.
3. 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 they have regarding the program.

E. Medical Services Program Coordinator

1. Shall schedule medical evaluations for employees under the Respiratory Protection Program and serve as a liaison between the PLHCP and the Program Administrator.

F. Safety Program Administrator

1. Shall coordinate with departmental Program Administrators to ensure regulatory compliance and effective implementation of the Respiratory Protection Program.

VI. PROGRAM DEVELOPMENT & IMPLEMENTATION

A. Affected Departments

1. Public Utilities (Waterworks)
2. Public Works

3. Parks, Recreation & Tourism
4. Engineering
5. Fire

B. General Requirements

1. The City of Newport News is required to develop and implement a written Respiratory Protection Program designed to protect employees in work areas where respirator use is required. Each department will incorporate worksite-specific procedures and elements into this written program to satisfy OSHA requirements. Each department's written program shall cover the following:

    a. Procedures for selecting respirators.
    b. Medical evaluations of employees required to wear respirators.
    c. Fit testing procedures.
    d. Routine use and emergency respirator use procedures.
    e. Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding and maintaining respirators.
    f. Procedures for ensuring adequate air quality for supplied-air respirators.
    g. Training in respiratory hazards for all affected employees.
    h. Training in proper use and maintenance of respirators.
    i. Program evaluation procedures.
    j. Procedures for ensuring that employees who voluntarily wear respirators comply with the Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard at https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppD.

2. A Program Administrator shall be designated for each affected department.

3. Each department will update their program as necessary to account for changes in the workplace affecting respirator use.

4. Equipment, training and medical evaluations will be provided to employees at no cost.

5. Respiratory hazards will be identified and evaluated.

6. Employee exposures that have not been or cannot be evaluated are considered immediately dangerous to life or health (IDLH).

7. Respirators selected for use will be certified by NIOSH and used under the conditions of certification.

8. Respirators will be selected based on evaluated workplace hazards and user factors affecting respirator performance and reliability.

9. A sufficient number of respirator sizes and models will be provided to correctly fit the users.

10. For IDLH atmospheres:

    a. Full facepiece pressure demand supplied-air respirators (SARs) with auxiliary self-contained breathing apparatus (SCBA) unit of full facepiece pressure demand SCBAs, with a minimum service life of 30 minutes, will be provided.

    b. Respirators used for escape only are NIOSH certified for the atmosphere in which they will be used.

    c. Oxygen deficient atmospheres will be considered IDLH.

11. For Non-IDLH atmospheres:

    a. Respirators selected will be appropriate for the chemical state and physical form of the contaminant.

    b. Air-purifying respirators used for protection against gases and vapors are equipped with end-of-service-life (ESLI) indicators or a change schedule will be implemented.

    c. Air-purifying respirators used for protection against particulates will be equipment with NIOSH certified high efficiency particulate air (HEPA) filters or other filters certified by NIOSH for particulates under 42 CFR Part 84.

C. Voluntary Respirator Use

1. This program will be implemented for employees who use elastomeric respirators (with the exception of filtering facepieces or dust masks) on a voluntary basis, to the extent that ensures each employee is medically able to use the respirator and the respirator is cleaned, disinfected, stored, inspected, repaired, or removed from service so that its use does not present a health hazard to the employee. Schedules will be established for these program elements for employees using elastomeric respirators on a voluntary basis.

2. The City of Newport News is not required to purchase or provide respirators for voluntary use.

3. Employees may wear respiratory protection if they so choose ONLY if it is determined that the respirator itself with not present a hazard to the employee. Employee misuse, other workplace hazards or employee medical conditions will be taken into account.

4. Employees who wear respiratory protection on a voluntary basis will be provided with appropriate facilities and time to clean, disinfect, maintain and store their respirators.

5. Employees who use a respirator voluntarily will be provided with Appendix D to Sec. 1910.134 (Mandatory) Information for Employees Using Respirators When Not Required Under the Standard from https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppD.

D. Employer-provided Respirators

1. The City of Newport News shall provide respirators, training and medical evaluations at no cost to employees who are required to wear respiratory protection in the workplace. Hazard assessments shall dictate whether respiratory protection is required.

VII. Respirator Selection

A. General Guidelines

1. Respirator selection will be based on the hazards to which employees are exposed and how workplace and user factors affect respirator performance and reliability. Refer to OSHA's Respiratory Protection eTool at https://www.osha.gov/SLTC/etools/respiratory/index.html for additional guidance.

   Some factors to be considered:

   a. Size and configuration of the work area
   b. Ease of worker communication
   c. Ease or difficulty of the work or rate of activity
   d. Workplace conditions including temperature and humidity and movement of other personnel and equipment

2. All respirators selected for use by City employees shall be certified by the National Institute for Occupational Safety and Health (NIOSH).

3. All selected respirators shall be used in compliance with conditions of the NIOSH certification.

4. A selection of respirator sizes and models will be provided to employees to ensure proper fit.

B. Hazard Assessment

1. Program Administrators and supervisors will conduct a hazard assessment of each operator, process or work area where airborne contaminants may be present in routine operations or during an emergency. The hazard assessment will include:

    a. Identification and development of a list of hazardous substances used in the workplace by work area or work process.
    b. Review of work processes to determine where potential exposures to these hazardous substances may occur. This review shall be conducted by surveying the workplace, reviewing process records, and talking with employees and supervisors.
    c. Exposure monitoring to quantify potential hazardous exposures. Monitoring will be conducted by air quality specialists in the Department of Engineering or contracted out.

2. Employee exposure to hazards will be measured through personal monitoring or estimated. Specific monitoring requirements for substance-specific OSHA standards will be followed. If exposure cannot be determined, the work area must be considered IDLH unless evidence to the contrary is demonstrable.

3. Physical hazards employees may encounter that require the use of respiratory protection may include any on the following non-exhaustive list of inhalation hazards:

    a. Dusts and fibers: Solid particles formed or generated from solid materials through mechanical processes such as crushing, grinding, drilling, abrading or blasting.
    b. Fumes: Solid particles formed when metal or other solid vaporizes and the molecules condense in cool air.
    c. Mists: Tiny droplets of liquid suspended in the air.
    d. Gases: Materials that exist as individual molecules in the air at room temperature.
    e. Vapors: Gaseous form of substances that are normally in the solid or liquid state at room temperature and pressure and are formed by evaporation.
    f. Biological Hazards: Bacteria, viruses, fungi and other living organisms that can cause acute and chronic infections if breathed in.

4. The Program Administrator will revise and update the hazard assessment when changes in the work area or operation necessitates.

5. Employees will contact their supervisor if they feel that respiratory protection is needed during a particular work activity. The Program Administrator will evaluate the potential hazard and communicate the results of that assessment to employees. If respiratory protection is in fact needed, all other elements of this program will be in effect for those tasks.

C. Respirators for IDLH Atmospheres

1. Respirators for use in IDLH (Immediately Dangerous to Life and Health) environments require the highest level of respiratory protection and reliability. Either of the following types of respirators shall be provided for use in IDLH environments:

    a. Full-facepiece pressure-demand SCBAs (Self Contained Breathing Apparatus) that are certified by NIOSH for a minimum service life of 30 minutes.
    b. Combination full-facepiece pressure-demand supplied-air respirators with auxiliary self-contained air supply.

2. Respirators for escape from IDLH atmospheres shall be NIOSH certified for escape from the atmosphere in which they will be used.

3. All oxygen-deficient atmospheres will be considered IDLH and atmosphere-supplying respirators shall be used. Any atmosphere-supplying respirator may be used if it can be demonstrated that, under all reasonable foreseeable conditions, the oxygen concentration in the work area can be maintained within the ranges specified in Table II of the standard. If this cannot be demonstrated, employees will be provided with full facepiece pressure-demand SCBAs or combination full facepiece pressure-demand supplied-air respirators with auxiliary self-contained air supply.

D. Respirators for Non-IDLH Atmospheres

1. The City of Newport News will provide respirators that are adequate to protect employee health and ensure compliance with all OSHA requirements under routine and reasonably foreseeable emergency situations. The assigned protection factors (APFs) listed in Table 1 of the standard will be used to select a respirator that meets or exceeds the required level of employee protection.

2. Employees will be provided protection from substances not regulated by OSHA but are known to be hazardous at levels encountered in the

workplace.

3. Respirators that are appropriate for the chemical state and physical form of the contaminant will be provided. The posed contaminant hazard and necessary level of filter efficiency shall be considered when selecting respirators:

    a. Air-purifying or atmosphere-supplying respirators will be selected for protection against gases and vapors.
    b. Air-purifying respirators including filtering facepieces with filters certified by NIOSH under 30 CFR part 11 as high efficiency particulate (HEPA) filters; filters certified by NIOSH under 42 CFR part 84; or atmosphere-supplying respirators shall be selected for protection against particulates.

E. Abrasive-blasting Operations

1. Abrasive-blasting respirators shall be worn by all abrasive-blasting operators:

    a. When working inside of blast-cleaning rooms
    b. When using silica sand in manual blasting operations where the nozzle and blast are not physically separated from the operator in an exhaust-ventilated enclosure
    c. Where concentrations of toxic dust dispersed by the abrasive blasting may exceed limits set in 1910.1000 and the nozzle and blast are not physically separated from the operator in an exhaust-ventilated enclosure.

2. Particulate filter respirators (dust-filter respirators) may be used for short, intermittent or occasional dust exposures such as cleanup, dumping of dust collectors or unloading shipments of sand at a receiving point when it is not feasible to control dust by enclosure, exhaust ventilation or other means. These respirators must be approved by NIOSH for protection against the particular type of dust encountered.

3. Dust-filter respirators may be used to protect the operator of outside abrasive-blasting operations where non-silica abrasives are used on materials having low toxicities.

4. Dust-filter respirators shall not be used for continuous protection where silica sand is used as the blasting abrasive, or toxic materials are blasted.

F. Spray Finish Operations

1. A supplied-air respirator will be used by employees working in spray booths.

VIII. Medical Evaluations

A. General Requirements for Employer-Provided Medical Evaluations

1. A medical evaluation shall be provided for each full-time, part-time, seasonal and temporary employee who wears respiratory protection in the workplace. The purpose of the medical evaluation is to determine the employee's ability to wear a respirator in the workplace without endangering his/her health. Refer to OSHA publication 3789 at https://www.osha.gov/Publications/OSHA3789info.pdf for a Medical Evaluation Questionnaire and further guidance.

2. A medical evaluation will be provided before the employee is fit tested and before any use of the respirator in the workplace.

3. Medical evaluations are required for employees wearing positive pressure and negative pressure respirators, except for filtering facepieces used on a voluntary basis (dust masks). Any employee refusing the medical evaluation will not be allowed to work in an area requiring respirator use.

4. Medical evaluations are required for employees wearing elastomeric or supplied-air respirators on a voluntary basis.

5. The city's Medical Services Program Coordinator will identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations.

6. The Program Administrator will keep a current list of employees included in medical surveillance. He/she is responsible for communicating necessary information to the Medical Services Program Coordinator regarding the program, such as when new hires or current employees need a medical evaluation.

B. Medical Evaluation Procedures

1. Administration of the medical evaluation will be governed by the following mandatory requirements:

    a. The confidentiality of the employee will be protected

b. The questionnaire or medical examination will be given during an employee's normal working hours or at a time and place convenient to the employee.
c. The employee must understand the questions on the medical questionnaire.

2. Employees who cannot speak or read English will be supplied an interpreter to facilitate the employee's understanding of the questionnaire.

3. Employees will be informed that a PLHCP is available to discuss the medical questionnaire and results. The Medical Services Program Coordinator will inform employees about how to contact the PLHCP.

C. Administration of Questionnaire and Examination

1. The required medical questionnaire shall be completed for each employee required to wear respiratory protection in the workplace.

2. The PLHCP is responsible for determining whether it is necessary to administer Part B of the questionnaire. The PLHCP can alter the questions in Part B in any manner he or she deems appropriate, provided OSHA compliance is maintained and the employee's rights or health is not compromised.

3. The questionnaire is not required to be administered during the medical examination but the PLHCP must obtain the same information from the worker that is contained in the questionnaire.

D. Follow-up Medical Evaluations

1. Follow-up examinations shall be provided to employees as required by the standard, and/or as deemed necessary by the PLHCP.

2. Additional medical evaluations will be provided to an employee when the following events occur:

    a. The employee reports symptoms related to his or her ability to use a respirator, such as shortness of breath, dizziness, chest pains or wheezing.
    b. The PLHCP, Program Administrator or supervisor determines the need for a reevaluation.
    c. Information from the Respiratory Protection Program suggests the need for reevaluation, including observations made during fit testing and program evaluation.
    d. Workplace conditions change so that an increased burden is placed on the employee's health.

E. Supplemental Information for the Primary Licensed Health Care Professional (PLHCP)

1. The Medical Services Program Coordinator will provide the PLHCP with specific information to be used in the determination of an employee's ability to use a respirator. It is the departmental Program Administrator's responsibility to provide this information to the Medical Services Program Coordinator prior to employee respirator use:

    a. The type and weight of the respirator to be worn by the employee
    b. The duration and frequency or respirator use, including for rescue and escape
    c. The level of physical effort that the employee would be expending while wearing a respirator
    d. Additional personal protective clothing and equipment that the employee would wear while wearing the respirator
    e. The temperature and humidity extremes that may be encountered in the work environment where respirator use is required
    f. A copy of the City of Newport News' Respiratory Protection Program
    g. A copy of the OSHA Respiratory Protection standard

2. Supplemental information need only be supplied to the PLHCP when the conditions of respirator usage change.

F. Medical Determination

1. The City of Newport News will obtain a recommendation from the PLHCP about the employee's ability to use a respirator. The PLHCP will provide the employee with a copy of this written recommendation. All information revealed during the medical evaluation will be kept strictly confidential by the PLHCP.

2. Final determination about an employee's ability to wear a respirator lies with the employee's supervisor.

3. If the PLHCP determines an employee is unable to wear a negative pressure respirator but would be able to wear a powered air-purifying respirator (PAPR), the employee will be provided with a PAPR. If the PLHCP determines in a subsequent medical evaluation that said employee can wear a negative pressure respirator, the City is no longer required to provide the employee with a PAPR.

IX. Fit Testing

A. General Requirements

1. Fit testing will be conducted on all employees who are required to wear either positive or negative pressure respirators that include a tight-fitting facepiece. Refer to https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134AppA For Fit Testing Procedures.

   Fit testing will be conducted:

   a. Prior to initial use
   b. Annually
   c. Whenever an employee switches to a different tight-fitting facepiece respirator
   d. If an employee experiences a change in physical condition that could affect the seal on the tight-fitting facepiece respirator
   e. If the respirator Program Administrator, PLHCP or employee's supervisor observes a change in the employee's physical condition that could affect the seal on the tight-fitting facepiece respirator
   f. After fit testing, if an employee reports that his/her respirator does not fit properly

2. Fit testing is not required for employees who voluntarily wear tight-fitting facepiece respirators in a work environment where such equipment is not necessary.

3. All fit testing conducted for employees of the City of Newport News will follow OSHA-approved protocols. Either qualitative fit testing (a pass/fail test that relies on the respirator wearer's response to a test agent used to determine respirator fit) or quantitative fit testing (the method of measuring the amount of leakage into a respirator) will be used to determine fit.

4. Each employee will be fit tested with the same type of respirator (make, model, style and size) that he/she will wear at the worksite.

5. Testing of tight-fitting atmosphere-supplying respirators and powered air-purifying respirators will be conducted according to the following:

   a. Fit testing will be conducted in the negative pressure mode
   b. Qualitative fit testing will be achieved by temporarily converting the facepiece into a negative pressure respirator with appropriate filters or by using an identical negative pressure air purifying respirator
   c. Quantitative fit testing will be achieved by modifying the facepiece to allow for sampling inside the mask midway between the mouth and nose. The facepiece will be restored to its original NIOSH-approved configuration before being used in the workplace. If the facepiece

cannot be restored to this configuration, the respirator will be taken out of service and used only for fit testing purposes.

B. Quantitative Fit Testing

1. Quantitative fit testing will be used in all situations where a negative pressure respirator is intended to protect workers from contaminant concentrations greater than 10 times the PEL. Both half-facepiece air purifying respirators and full-facepiece air purifying respirators may be qualitatively fit tested if they are to be worn in work areas where the concentration of contaminant is no more than 10 times the PEL.

2. If quantitative fit testing is used to test the tight-fitting facepiece respirator, the fit is unacceptable unless:
   a. Half or quarter facepiece: the fit factor achieved in the test is greater than or equal to 100
   b. Full facepiece: the fit factor achieved in the test is greater than or equal to 500

C. Qualitative Fit Testing

1. Negative pressure air-purifying respirators may be qualitatively fit tested if the respirator is to be used in workplace atmospheres where the level of the hazardous contaminant is 10 times or less than the permissible exposure limit (PEL) and lower than the level that is immediately dangerous to life or health (IDLH).

2. Qualitative fit testing will only be used to fit test PAPRs, SCBAs or negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.

X. Respirator Use

A. Change Schedules

1. Air-purifying respirators used by employees of the City of Newport News shall be equipped with an end-of-service-life indicator (ESLI) certified by NIOSH for the contaminant. If there is no appropriate ESLI, a change schedule for canisters and cartridges will be developed and implemented based on objective information that will ensure that canisters and cartridges are changed before the end of their service life. The following will be considered:

   a. Contaminants the respirator is to protect against
   b. Concentration of the contaminants in the work area
   c. Frequency of respirator use

d. Temperature, humidity and air flow through the cartridge or canister
e. Employees' work rates
f. The presence of other potentially interfering chemicals

B. Preventing Leaks in the Facepiece Seal

1. Employees wearing tight-fitting respirators will have no conditions which interfere with the seal or the respirator to the employee's face or with the valves. Common conditions that can interfere with the seal or valve include:

    a. Facial hair or scars
    b. Jewelry or headgear that projects under the facepiece seal
    c. Missing dentures
    d. Corrective glasses, goggles or other PPE including face shields, protective clothing, helmets, and eyeglass inserts or spectacle kits

2. Contact lenses may be safely worn with respirators. Employees may use personal protective equipment such as corrective glasses, goggles, face shields, protective clothing, helmets and eyeglass inserts or spectacle kits with tight-fitting respirators, provided the equipment is worn in a way that:

    a. Does not interfere with the face-to-facepiece seal
    b. Does not distort the worker's vision
    c. Does not cause physical harm to the worker

3. Employees will perform a user seal check each time they put on a tight-fitting respirator to verify the respirator has been donned correctly and is working properly. A user seal check is not a substitute for a qualitative fit test. Refer to Appendix B-1 of the standard for OSHA-approved procedures for the user seal check.

C. Respirator Use During Emergencies

1. The Program Administrator will identify areas as having foreseeable emergencies and create standard operating procedures to protect the safety and health of respirator users in the work area. These emergency procedures will include:

    a. Specific information as to what type(s) of foreseeable emergencies could be expected and where they may occur
    b. Specific instructions for employees for each foreseeable emergency situation to ensure prompt and effective response
    c. The location of emergency respirators, if required

D. Ensuring Effective Operation

1. Supervisors will conduct routine surveillance to look for any changes that may affect the effectiveness of a respirator. Changes in the work area, work tasks or processes that can result in changes to the hazard or time period of exposure, and changes that put the employee in closer proximity to the hazard will be taken into account.

2. Employees will be allowed to leave the respirator use area to perform any activity that involves removing or adjusting a respirator facepiece or if there is indication that a respirator may not be fully effective. A safe area free of respiratory hazards or contamination will be provided. Employees must leave the respirator use area:

    a. If the employee needs to wash his or her face or the respirator facepiece to prevent eye or skin irritation associated with respirator use
    b. If the employee detects vapor or gas breakthrough
    c. If the employee notices that the facepiece is leaking
    d. If the employee observes a change in breathing resistance
    e. If the respirator or parts of the respirator are not working properly and need to be replaced

3. Respirators that are defective, damaged or not working properly will be removed from service and repaired or replaced. At the first indication that a respirator may not be functioning properly, the employee will leave the area and notify his/her immediate supervisor. The supervisor will facilitate replacement, repair or removal of the respirator(s) before allowing the employee to return to an area in which respirator use is required.

E. Protecting Employees Entering IDLH Atmospheres and Performing Interior Structural Firefighting

1. Standby personnel are required when workers use respirators in IDLH environments. Standby personnel must be available, trained and equipped to assist respirator users inside the IDLH atmosphere and to provide effective emergency rescue when needed. Training of these personnel shall include the following:

    a. How to provide effective emergency rescue
    b. The importance of notifying the immediate supervisor, designated representative, or respirator program administrator before entering the IDLH atmosphere.

2. Standby personnel will be equipped with the following:

a. Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA, *and*
b. Either appropriate retrieval equipment for removing the workers inside the IDLH atmosphere where retrieval equipment would contribute to the rescue of the workers inside the IDLH atmosphere and would not increase the overall risk resulting from entry, *or*
c. Equivalent means for rescue where retrieval equipment could increase the overall risk resulting from entry

3. Standby personnel will maintain visual, voice or signal line communication with the employees in the IDLH environment.

4. A single standby person is adequate if an IDLH environment has been monitored, analyzed and controlled, and if one person can easily maintain communication with all workers in the IDLH environment.

5. The Program Administrator or designated departmental representative is responsible for providing necessary assistance appropriate for the emergency situation by ensuring:

   a. Rescue operations are carried out appropriately
   b. Rescues are provided with required equipment
   c. Designated employees are adequately prepared to conduct rescue attempts

6. Employees involved in interior structural firefighting must adhere to the requirements for all IDLH atmospheres in addition to the following:

   a. At least two employees are to enter the IDLH atmosphere and remain in visual or voice contact with one another at all times
   b. At least two employees are to be located outside the IDLH atmosphere
   c. All employees engaged in interior structural firefighting are to use SCBAs

7. For additional provisions for confined space entry, hazardous waste operations and emergency response, as they relate to respiratory protection, please refer to the City of Newport News Confined Space and Hazard Communication Programs.

XI. Maintenance and Care

A. General Requirements

1. Employees shall be provided with respiratory protective equipment that is clean, sanitary and in good working order. Refer to 1910.134(h) at https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134#1910.134(e) for the cleaning and disinfecting, storage, inspection, and repair of respirators used by employees.

2. A system of respirator care and maintenance shall be adopted and shall provide for:

    a. Cleaning and disinfection procedures
    b. Proper storage
    c. Regular inspections
    d. Repair methods

B. Cleaning and Disinfecting

1. Respiratory protective equipment will be regularly cleaned and disinfected according to the procedures specified in Appendix B-2 of the standard, or according to manufacturer specifications.

2. When a respirator is issued for the exclusive use of an individual employee, the equipment must be cleaned and disinfected as often as necessary to be maintained in a clean and sanitary condition.

3. When a respirator is used by more than one employee, the equipment must be cleaned and disinfected before being used by different individuals.

4. When a respirator is maintained for use in emergencies, testing and training exercises, the equipment must be cleaned and disinfected after each use.

5. Appropriate training, ample time and necessary equipment shall be provided to employees to facilitate their care of respirators. It is the supervisor's responsibility to ensure that an adequate supply or appropriate cleaning and disinfection materials is available to employees.

C. Storage

1. Respirators are to be stored in a manner that:

    a. Protects them from contamination, dust, sunlight, extreme temperatures, excessive moisture, damaging chemicals or other destructive conditions
    b. Prevents the facepiece or valves from becoming deformed

c. Follows all storage precautions issued by the respirator manufacturer

2. Respirators intended for emergency use must be:

a. Kept accessible to the work area while avoiding an area that may itself become contaminated or inaccessible in an emergency
b. Stored in a compartment or cover that is clearly identified as containing emergency equipment

D. Inspection

1. The frequency of respirator inspections is dependent on whether the respirator is intended for non-emergency, emergency or escape-only use. All respirator inspections must include a check of:

a. Respirator function
b. Elastomeric parts for pliability and deterioration
c. Tightness of connections
d. Conditions of the facepiece, head straps, valves and cartridges

2. The following checklist should be used when inspecting respirators:

a. Facepiece

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

b. Head straps

- Breaks or tears
- Broken buckles

c. Valves

- Residue or dirt
- Cracks or tears in valve material

d. Filters/Cartridges

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

e. Air Supply Systems

- Breathing air quality/grade
- Condition of supply hoses
- Hose connections
- Settings on regulators and valves

3. Non-emergency use equipment will be inspected before each use and during cleaning and disinfection.

4. Self-contained breathing apparatus (SCBA) will be inspected monthly to ensure the air and oxygen cylinders that are available for immediate use are maintained in a fully charged state. During the inspection employees will activate the regulator and low pressure warning devices to ensure they function properly.

5. Emergency use respirators will be inspected at least monthly. Employees will check for proper functioning before and after each use. While inspecting emergency use respirators, the individual conducting the inspection must:

   a. Document the date of inspection, name or signature of the inspector, inspection findings, any remedial action required, and serial number or other identification of the respirator.
   b. Retain the inspection documentation with the respirator or in the storage compartment until the next certification. Tags may be used to document inspections.

6. Emergency escape-only equipment shall be inspected before being carried into the workplace for use.

E. Repairs

1. Respirators that do not pass inspection shall be removed from service and discarded, repaired or adjusted. When respirators are removed from service they are to be tagged accordingly to avoid inadvertent use.

2. Respirators worn by employees of the City of Newport News will be repaired only by an appropriately trained individual.

3. Repairs will be made using only NIOSH-approved parts that are designed specifically for the respirator being repaired.
4. Valves, regulators and alarms must be adjusted and repaired only by the manufacturer or an individual trained by the manufacturer.

XII. Breathing Air Quality and Use

A. Atmosphere-Supplying Respirators

1. Employees required to wear atmosphere-supplying respiratory protection shall be provided breathing air of high purity and equipment that operates reliably. Refer to 1910.134(i) at https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.134 for OSHA Breathing Air Quality and Use requirements.

B. Specifications for Breathing Air

1. Compressed air, compressed oxygen, liquid air and liquid oxygen will meet certain specifications for breathing by employees wearing atmosphere-supplying respirators.

    a. Compressed and liquid oxygen purchased by the City of Newport News for use with atmosphere-supplying respirators worn by employees will meet the U.S. Pharmacopoeia requirements for medical or breathing oxygen.
    b. Compressed breathing air purchased by the City of Newport News for use with atmosphere-supplying respirators worn by employees will meet at least the requirements for Grade D breathing air as described in ANSI/Compressed Gas Association Commodity Specification for Air (G-7.1).

2. When breathing air is purchased and not produced from a compressor, certificates of analysis from air suppliers will be relied on to ensure that breathing air meets the required specifications.

C. Oxygen Use

1. Employees are prohibited from using compressed oxygen in respirators that have previously bee used with compressed air, due to the increased risk of explosion/fire from compressor oil and grease coming in contact with high pressure oxygen.

2. Employees will only use oxygen concentrations greater than 23.5 percent with equipment designed specifically for oxygen service and distribution to reduce the risk of explosion/fire.

D. Cylinder Use

1. Procedures for proper cylinder storage and handling, as dictated by OSHA, will be followed at all times.

2. Cylinders used with atmosphere-supplying respirators will meet the following requirements:

    a. Cylinders of breathing air must be tested and maintained according to Department of Transportation (DOT) Shipping Container Specific Regulations, 49 CFR Part 173 and 178.
    b. Cylinders of purchased breathing air must be accompanied by a certificate from the supplier indicating that the contents of each cylinder have been tested and found to meet the criteria for Grade D breathing air.
    c. Cylinder contents must have a moisture level that does not exceed a dew point of minus 50 degrees Fahrenheit (minus 45.6 degrees Celsius) at one atmosphere to prevent respirator valves from freezing when excess moisture accumulates on the valves.

E. Compressor Use

1. To maintain the purity of supplied breathing air, air compressors used with atmosphere-supplying respirators will be located so the air intake component is not drawing from areas that contain:
    a. Combustion exhaust from vehicles or the compressor itself
    b. Facility process exhaust
    c. Contaminated air from hazardous work areas

2. The moisture content of compressed air will be kept to a minimum to prevent freeze of respirator valves at cold temperatures.

3. Air-purifying beds and filters will be used in the supply lines to ensure delivery of a continuous flow of Grade D breathing air to the respirator user. These filters will be maintained, refurbished or replaced as specified by the equipment manufacturer.

4. A tag will be maintained at/on the compressor indicating when the sorbent beds and filters were last changed. The employee authorized to perform this maintenance will sign and date the tag accordingly. Only a tag indicating the most recent filter and bed changes need be retained at/on the compressor.

F. Carbon Monoxide

1. Due to the risk of employee injury or death, precautions regarding carbon monoxide will be taken when using air compressors with atmosphere-supplying respirators.

2. When using air compressors that are not oil lubricated, any or all of the following precautions will be taken to ensure that carbon monoxide in the breathing air is less than or equal to 10 ppm:

    a. The compressor's air intake component is located in an area free of contaminants
    b. Continuous or frequent monitoring of the breathing air supply is conducted
    c. Inline carbon monoxide filters are used
    d. High-temperature alarms or shut-off devices are used

3. A carbon monoxide alarm or high-temperature alarm will be installed on compressors that are oil lubricated.

4. Carbon monoxide levels will be periodically monitored on these compressors. Continuous monitoring will be conducted on older and/or rented compressors.

G. Couplings

1. Couplings used on airlines for atmosphere-supplying respirators shall be incompatible with outlets for non-breathable worksite air or other gas systems.
2. At no time shall an asphyxiating substance be introduced into a respirator's airlines.

H. Labeling of Breathing Gas Containers

1. To avoid the possibility of confusion when connecting the breathing air source to a respirator, breathing air containers will be labeled in accordance with the NIOSH respirator certification standard, 42 CFR 84, which incorporates the American National Standards Institute's Method of Marking Portable Compressed Gas Containers to Identify Material Contained, Z48.1.

XIII. Identification of Filters, Cartridges and Canisters

1. All respirator filters, cartridges and canisters used shall be labeled and color coded with the NIOSH approval label. Only respirators approved by NIOSH shall be purchased by the City of Newport News.

2. The NIOSH approval label on each filter, cartridge and canister shall not be removed, defaced or obscured. Precautions shall be taken to ensure the label remains legible.

3. Employees may mark the initial use date on the label but must do so in a way that does not obscure the information on the label.

XIV. Training and Information

1. Training shall be provided to each employee required to wear respiratory protection. Employees whose work tasks require respiratory protection shall be able to demonstrate knowledge of the following:

    a. Why the respirator is necessary and how improper fit, usage and maintenance can render the respirator ineffective.
    b. What the limitations and capabilities of the selected respirator are.
    c. How to use the respirator effectively in emergency situations likely to be encountered in the specific work area, including respirator malfunction.
    d. How to inspect, put on and remove, and check the seals of the respirator.
    e. What the respirator maintenance and storage procedures are.
    f. How to recognize medical signs and symptoms that may limit or prevent effective use of the respirator.
    g. The general provisions of OSHA's Respiratory Protection standard.

2. Employees shall demonstrate comprehension of all concepts addressed during respirator training. Training shall be conducted in a manner that is understandable to employees based on education level and language background.

3. Training shall be provided to employees prior to requiring them to use respiratory protection in the workplace.

4. If the Program Administrator can demonstrate that a new hire has received respirator training within the previous 12 months and the employee can demonstrate the necessary knowledge, repeat training is not required. Where training in some elements is lacking or inadequate, re-training will be provided to such employees. Previous training not repeated initially upon beginning the job must be provided no later than 12 months from the date of the previous training.

5. Annual retraining shall be provided to employees for as long as they are required to wear respiratory protection. Additional circumstances in which retraining is required are as follows:

    a. Changes in the workplace or the type of respirator make previous training obsolete.
    b. The knowledge and skill necessary to use the respirator properly has not been retained by the employee.

c. Any other situation arises in which retraining appears necessary to ensure safe respirator use.

6. Employees who handle and store cylinders used with atmosphere-supplying respirators or maintain/operate air compressors used with atmosphere-supplying respirators shall be trained on safe handling and use and the hazards associated with these operations as they relate to the Respiratory Protection Program. This training shall be documented.

7. Signage indicating "Respiratory protection required" shall be conspicuously posted in all areas where respiratory protection is required.

XV. Recordkeeping

A. Medical Evaluation Records

1. The PLHCP will retain all confidential information such as completed medical questionnaires and documented findings. The physician's written recommendation regarding each employee's ability to wear a respirator shall be retained by the Department of Human Resources.

B. Respirator Fit Testing Records

1. Written records of qualitative and quantitative fit tests administered to employees shall be retained by the Program Administrator. These records shall include the following information:

   a. The name or employee identification number of the employee tested
   b. The type of fit test performed
   c. The make, model and size of the respirator tested
   d. The date of the fit test
   e. Pass/Fail results of a qualitative fit test is used, or
   f. The fit factor and strip chart recording, or other record of the test results if a quantitative fit test is used

2. Fit test records shall be retained until the next fit test is administered. Fit test records for employees who no longer wear respirators need not be retained.

C. Written Respiratory Protection Program

1. A copy of the current Respiratory Protection Program shall be retained with the Safety Program Administrator.

2. The written Respiratory Protection Program shall be made available to all employees via the Intranet. Program Administrators will instruct affected

employees how to access this document.

3. Each department with affected employees will tailor the city's Respiratory Protection Program to meet their specific needs.

D. Access to Records

1. Written materials required to be retained will be made available upon request to the affected employees, their designated representatives and to OSHA. The City of Newport News shall comply with OSHA's Access to Employee Exposure and Medical Records standard, **29 CFR 1910.1020**.

XVI. Program Evaluation

1. To ensure that all elements of the respiratory protection program are being effectively implemented, the Safety Program Administrator shall review this Respiratory Protection program annually.

2. Department or facility-specific respiratory protection programs shall be evaluated as needed, with sufficient frequency to ensure that all elements of the respiratory protection program are being effectively implemented. The frequency of evaluation is dependent on the complexity and/or variability of the program and factors such as:

    a. The type and extent of hazards in the workplace
    b. The types of respirators used by employees
    c. The number of employees who use respirators

3. Departmental Program Administrators shall consult with employees regularly to assess their views on the effectiveness of the respiratory protection program and to identify any problems they may be encountering with the use of respirators. Any problems identified shall be documented and corrected. Assessment shall include:

    a. Whether proper fit of respirators is being achieved and whether respirator use in interfering with effective work performance.
    b. Whether appropriate respirators have been selected.
    c. Whether respirators are being properly used.
    d. Whether respirators are being properly maintained.