MPC

MONTEREY PENINSULA COLLEGE

Respiratory Protection Program

Version:

1.0

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1. PROGRAM APPROVAL

1.1. The policies and procedures outlined in this written Respiratory Protection Program (RPP) are strictly enforced at Monterey Peninsula College District (MPC) and are to be adhered to at all times.

1.2. The MPC Respiratory Protection Officer (RPO) listed below before they are put into practice must approve any changes to the methods stated herein.

1.2.1. APPROVED BY: Pete Olsen

1.2.1.1. Title: Facility Manager

1.3. The above named person has the authority and responsibility to implement this and other health and safety programs.

2. DEFINITIONS

2.1. Employees reading the RPP or the regulation may encounter abbreviations or terms that they may not recognize.

2.2. Definitions of these terms are available in Attachment A of this written program.

2.2.1. If a term is not contained in the attachment please contact the RPO.

3. PURPOSE

3.1. MPC has designed, developed and implemented this RPP to ensure the safety and health of its' employees against respiratory hazards that may be present in the workplace under normal or emergency conditions.

3.2. In the control of those occupational diseases caused by breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors, the primary objective shall be to prevent atmospheric contamination.

3.2.1. This shall be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general and local ventilation, and substitution of less toxic materials).

3.3. Engineering controls are the first line of defense at MPC; however, engineering controls have not always been feasible for some of our operations, or have not always completely controlled the identified hazards.

3.3.1. In these situations, respirators and other protective equipment must be used.

3.4. This program will be implemented in areas where exposure to contaminants cannot be effectively eliminated by the use of engineering controls or if an employee chooses to use the equipment for personal comfort (voluntary use).

3.4.1. The tasks requiring respirator use at MPC are listed in Attachment B.

3.5. When effective engineering controls are in operation, respiratory protection equipment is not usually required.

3.5.1. When engineering controls are in the process of evaluation or modification, appropriate respiratory protective equipment may be necessary.

3.6. Since this policy is not an all inclusive policy in regards to general health and safety hazards, or chemical hazards, it is imperative that employees understand that all MPC safety policies shall be adhered to at all times.

3.7. All employees are required to follow the MPC RPP.

3.7.1. Failure to follow the RPP may result in disciplinary action for employees or termination of contract for contractors.

3.8. Any questions regarding the RPP or the use of respiratory protective equipment should be directed to the RPO.

4. SCOPE

4.1. This program applies to all employees who are required to wear respirators.

4.2. Employees who voluntarily wear a respirator when a respirator is not required may be subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with information listed in the voluntary use of respirators section of the RPP.

4.2.1. Employees who voluntarily wear filtering facepieces (dust masks) are not subject to the medical evaluation, cleaning, storage, and maintenance provisions of this program.

4.3. Employees participating in the RPP do so at no cost to them.

4.3.1. The expense associated with training, medical evaluations and respiratory protection equipment will be borne by MPC.

5. REGULATION

5.1. Cal/OSHA Title 8 of the California Code of Regulations (CCR), General Industry Safety Orders (GISO) §5144 regulates respiratory protection.

5.1.1. The regulation has 5 appendices that are mandatory.

5.1.1.1. Appendix A details fit testing protocols.

5.1.1.2. Appendix B-1 details User Seal Check Procedures.

5.1.1.3. Appendix B-2 details Respirator Cleaning Procedures.

5.1.1.4. Appendix C is the CAL/OSHA Respirator Medical Evaluation Questionnaire.

5.1.1.5. Appendix D is Information for Employees Using Respirators When Not Required Under the Standard.

6. WRITTEN PROGRAM

6.1. Cal/OSHA requires MPC to develop and implement a written RPP.

6.1.1. This is required in any workplace where respirators are necessary to protect the health of the employee or whenever respirators are required by MPC.

6.2. The RPP shall be reviewed annually and updated as necessary to reflect those changes in workplace conditions that affect respirator use.

6.3. CAL/OSHA requires that the written RPP address the following:

6.3.1. Procedures for selecting respirators for use in the workplace;

6.3.2. Medical evaluations of employees required to use respirators;

6.3.3. Fit testing procedures for tight-fitting respirators;

6.3.4. Procedures for proper use of respirators in routine and reasonably foreseeable emergency situations;

6.3.5. Procedures and schedules for cleaning, disinfecting, storing, inspecting, repairing, discarding, and otherwise maintaining respirators;

6.3.6. Procedures to ensure adequate air quality, quantity, and flow of breathing air for atmosphere-supplying respirators;

6.3.7. Training of employees in the respiratory hazards to which they are potentially exposed during routine and emergency situations;

6.3.8. Training of employees in the proper use of respirators, including putting on and removing them, any limitations on their use, and their maintenance; and

6.3.9. Procedures for regularly evaluating the effectiveness of the program.

7. RESPONSIBILITIES

7.1. The responsibilities of MPC employees who are authorized to use respiratory protective equipment include:

7.1.1. Using the respiratory protective equipment provided by MPC in accordance with the instructions and training received.

7.1.2. Inspecting the respirator before each use.

7.1.3. Reporting if the respirator no longer fits well and any malfunction of the respirator to their supervisor, or the RPO.

7.1.4. Performing a positive and negative fit check before entering the area of possible exposure.

7.1.5. Refraining from donning the respirator when conditions prevent a good gas tight face seal.

7.1.6. Care for and maintain their respirators as instructed, and store them in a bag, or equivalent, and clean sanitary location.

7.1.7. Inform RPO of any respiratory hazards that they feel are not adequately addressed in the workplace and of any other concerns regarding the program.

7.2. In addition to the above responsibilities, the RPO is responsible for ensuring that:

7.2.1. The MPC RPP is properly implemented.

7.2.2. Respirator users have received appropriate training, fit testing, and medical surveillance.

7.2.3. Determining whether or not a person may be assigned a task requiring the use of respiratory protective equipment using guidelines established by the physician.

7.2.4. Appropriate respirators and accessories such as sanitation supplies are available.

7.2.5. Tasks requiring the use of respiratory protection have been identified.

7.2.6. Proper respiratory protection is worn when necessary.

7.2.7. Respirators are properly cleaned, maintained, and stored according to the RPP.

7.2.8. Respirators fit well and do not cause discomfort.

7.2.9. Work areas and operations are continually monitored to identify respiratory hazards.

7.2.10. Methods are developed to address respiratory hazards or other concerns associated with the RPP.

7.2.11. Selecting, approving, ordering and distributing respiratory protective equipment.

7.2.12. Work areas, processes or tasks that require workers to wear respirators have been evaluated for hazards.

7.2.13. The RPP has been evaluated on an annual basis and updating as necessary.

7.2.14. Employee exposures to airborne hazards are monitored to determine if employee exposure is above the allowable limit if overexposure is possible.

7.2.15. Assisting in the coordination, design and implementation of projects, which are directly related to respiratory protection (such as the introduction of new processes or equipment that generates airborne contaminants or modifications of air exhaust and ventilation systems).

7.2.16. Fit testing for all employees expected to use respiratory protective equipment is scheduled and provided.

7.2.17. Records of respiratory protective equipment issuance, fit testing, training, and medical surveillance are kept.

7.3. Providing means for cleaning respiratory protective equipment.

7.4. Providing information to the Physician or other Licensed Health Care Professional (PLHCP).

7.5. Employees ordering respiratory protective equipment at MPC must obtain authorization from the RPO prior to the purchase of the equipment or accessories.

7.6. MPC shall provide respirators that are applicable and suitable for the purpose intended.

8. MEDICAL EVALUATION

8.1. Using a respirator may place a physiological burden on employees that varies with:

8.1.1. The type of respirator worn,

8.1.2. The job and workplace conditions in which the respirator is used, and

8.1.3. The medical status of the employee.

8.2. Medical evaluation is required for all respirator users except for employees who voluntarily use dusts masks and for those using escape-only respirators.

8.3. The medical evaluation must be provided before the initial fit testing and before the respirator is used for the first time.

8.4. Medical evaluations consist of the administration of a medical questionnaire or provision of a physical examination that elicits the same information as the questionnaire for the employee.

8.4.1. The MPC medical evaluation questionnaire is in Attachment D of this program.

8.4.2. If an employee goes through a physical examination there is no need to fill out the medical evaluation questionnaire at MPC.

8.5. MPC may not change the wording of questions in Part A of the medical questionnaire, if the form is being used as the sole means to evaluate employees.

8.6. The PLHCP may add questions to the questionnaire that could assist in determining whether the employee can perform the work while wearing respiratory protection.

8.7. The medical questionnaire and examinations shall be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee.

8.7.1. MPC will ensure that the questionnaire is administered in such a manner that employees can understand the content and the confidentiality of the evaluation are maintained.

8.7.2. Where the employee cannot understand English, MPC will have the questionnaire translated into the employee's language either through a translator or a translated written copy.

8.7.3. In cases where the employee cannot read, the employee can request someone other than MPC to orally read them the questionnaire or the PLHCP may obtain through an interview or examination the same information requested on the medical questionnaire.

8.7.4. In order to maintain strict confidentiality of the information obtained in the questionnaire, MPC role is limited to distributing the blank questionnaire to the employee for him or her to fill out, or providing it to the PLHCP, who will administer the questionnaire to the employee.

8.7.5. The employee is to place the questionnaire in an envelope seal it and mark it with their name and the word YES or NO.

8.7.5.1. Yes if they answered yes to any question in part A, section 2.

8.7.5.2. No if they answered no to all the above listed questions.

8.8. MPC will ensure that a follow-up medical examination is provided for an employee who gives a positive response to any question among questions 1 through 8 in Section 2, Part A of the questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination.

8.9. MPC has made arrangements with a PLHCP to perform medical examinations for employees using respiratory protective equipment.

8.9.1. The PLHCP may be a physician, a registered nurse, nurse practitioner; physician assistant, or other licensed health care professional acting within the scope of his or her state license, registration, or certification.

8.10. To schedule a medical exam contact the RPO.

8.10.1. The follow-up medical examination shall include any medical tests, consultations, or diagnostic procedures that the PLHCP deems necessary to make a final determination.

8.11. The following information will be provided to the PLHCP by the RPO before the PLHCP makes a recommendation concerning an employee's ability to use a respirator:

8.11.1. The type and weight of the respirator to be used by the employee;

8.11.2. The duration and frequency of respirator use (including use for rescue and escape);

8.11.3. The expected physical work effort;

8.11.4. Additional protective clothing and equipment to be worn; and

8.11.5. Temperature and humidity extremes that may be encountered.

8.11.6. Copy of the MPC written RPP and

8.11.7. A copy of the Cal/OSHA GISO §5144 respiratory protection regulation.

8.12. If MPC replaces a PLHCP it must ensure that the new PLHCP obtains this information, either by providing the documents directly to the PLHCP or having the documents transferred from the former PLHCP to the new PLHCP.

8.12.1. CAL/OSHA does not require that employees be medically reevaluated solely because a new PLHCP has been selected.

8.13. In determining the employee's ability to use a respirator, MPC shall:

8.13.1. Obtain a written recommendation regarding the employee's ability to use the respirator from the PLHCP.

8.13.2. The recommendation shall provide only the following information:

8.13.2.1. Any limitations on respirator use related to the medical condition of the employee, or relating to the workplace conditions in which the respirator will be used, including whether or not the employee is medically able to use the respirator;

8.13.2.2. The need, if any, for follow-up medical evaluations; and

8.13.2.3. A statement that the PLHCP has provided the employee with a copy of the PLHCP written recommendation.

8.13.2.4. A copy of the PLHCP recommendation letter is to be kept in the employee's personnel file.

8.14. MPC may accept the written medical recommendation of the employee's ability to use a respirator as determined by their previous employer's PLHCP only if the work conditions and type and weight of the respirator remains the same and appropriate for use at their new work site.

8.14.1. In this situation, MPC must obtain from the previous employer a copy of the PLHCP written recommendation.

8.15. MPC will provide the employee with an opportunity to discuss the questionnaire and examination results with the PLHCP.

8.16. If the respirator is a negative pressure respirator and the PLHCP finds a medical condition that may place the employee's health at increased risk, MPC will provide a Powered Air Purifying Respirator (PAPR) if the PLHCP medical evaluation finds that the employee can use such a respirator;

8.16.1. If a subsequent medical evaluation finds that the employee is medically able to use a negative pressure respirator, then MPC is no longer required to provide a PAPR.

8.17. Employees who refuse to be medically evaluated cannot be assigned to work in areas or perform tasks that require the use of respiratory protective equipment.

8.18. Wearing of contact lenses is permitted when the use of respiratory protective equipment is required.

8.19. Employees with certain physical characteristics such as beards, sideburns, hollow temples, and deep skin creases may not be able to obtain a satisfactory seal against the face piece.

8.19.1. Such employees shall not be allowed to enter areas where the use of respiratory protective equipment is required.

8.20. MPC will provide additional medical evaluations if:

8.20.1. An employee reports medical signs or symptoms that are related to ability to use a respirator;

8.20.2. The PLHCP informs MPC that an employee needs to be reevaluated;

8.20.3. Observations made during fit testing and program evaluation, indicates a need for employee reevaluation; or

8.20.4. A change occurs in workplace conditions (e.g., physical work effort, protective clothing, temperature) that may result in a substantial increase in the physiological burden placed on an employee.

8.21. MPC may discontinue an employee's medical evaluations when the employee is no longer required to use a respirator.

8.22. Members of the confined space rescue team will receive annual medical surveillance unless advised otherwise by the medical director.

9. TRAINING

9.1. Employees are required to receive effective respiratory protection training before they can be issued or use a respirator.

9.1.1. The training must be comprehensive, and understandable, and

9.1.2. Refresher training must be provided at least annually, or if:

9.1.2.1. Changes in the workplace or the type of respirator render previous training obsolete;

9.1.2.2. Inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill; or

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

9.2. Every employee that may need to use a respirator will be trained on the following topics:

9.2.1. Need for respiratory protection,

9.2.2. Respiratory hazards and their health effects,

9.2.3. Cal/OSHA regulation requirements,

9.2.4. Intended use of respiratory protective equipment,

9.2.5. Hazard assessment and proper selection & use of respirators,

9.2.6. Limitations of respiratory protective equipment,

9.2.7. Proper donning, adjusting and checking for fit,

9.2.8. Fit testing,

9.2.9. Emergency use procedures,

9.2.10. Inspection and maintenance procedures,

9.2.11. Cleaning and storage methods, and

9.2.12. Site written RPP.

9.3. Training records shall be kept according to the requirements of the MPC Injury and Illness Prevention Program.

9.4. To schedule training contact the RPO.

9.5. Employees must demonstrate their understanding of the topics covered in the training through hands-on exercises and a written test.

9.6. If MPC is able to demonstrate that a new employee has received training within the last 12 months that meets the above-mentioned guidelines the employee is not required to repeat such training provided that the employee can demonstrate knowledge of those element(s).

10. HAZARD ASSESSMENT

10.1. It is essential for MPC to characterize the nature and magnitude of employee exposures to respiratory hazards before selecting respiratory protection equipment.

10.1.1. MPC must make a "reasonable estimate" of the employee exposures anticipated to occur as a result of those hazards, including those likely to be encountered in reasonably foreseeable emergency situations, and must also identify the physical state and chemical form of such contaminant(s).

10.2. When employees are exposed to a respiratory hazard and/or are required to wear respirators, MPC will conduct an exposure assessment.

10.2.1. Examples of when assessments should be considered may include but are not limited to:

10.2.1.1. When CAL/OSHA has a substance specific standard (example: formaldehyde).

10.2.1.2. When employees notice symptoms (e.g. irritation, odor) or complain of respiratory health effects.

10.2.1.3. When the workplace contains visible emissions (e.g. fumes, dust, aerosols).

10.3. Specific characteristics of the airborne hazard will be established in order to select an appropriate respirator.

10.3.1. Is the airborne contaminant a particulate (dust, fumes, mist, aerosol) or a gas/vapor?

10.3.2. Is the airborne contaminant a chemical and are Safety Data Sheets (SDS) available?

10.3.3. Are there any mandatory (Permissible Exposure Limit) or recommended (Threshold Limit Value) occupational exposure levels for the contaminant?

10.4. CAL/OSHA permits MPC to use many approaches for estimating worker exposures to respiratory hazards.

10.4.1. Sampling - Personal exposure monitoring is the "gold standard" for determining employee exposures because this is the most reliable approach for assessing how much and what type of respiratory protection is required in a given circumstance.

10.4.1.1. Sampling should utilize methods appropriate for contaminants(s).

10.4.1.2. Sampling should present the worst case exposures; or

10.4.1.3. Sampling should represent enough shifts and operations to determine the range of exposure

10.4.2. Objective Information – MPC may rely on information and data that indicate that use or handling of a product or material cannot, under worst-case conditions, release concentrations of a respiratory hazard above a level that would trigger the need for respirator use or require use of a more protective respirator.

10.4.2.1. MPC can use data on the physical and chemical properties of air contaminants, combined with information on room dimensions, air exchange rates, contaminant release rates, and other pertinent data, including exposure patterns and work practices, to estimate the maximum exposure that could be anticipated in the workplace.

10.4.2.2. Data from industry-wide surveys by trade associations for use by their members, as well as from stewardship programs operated by manufacturers for their customers, are often useful in assisting MPC to obtain information on employee exposures in their workplaces.

10.4.2.3. Variation - MPC will attempt to account for potential variation in exposure by using exposure data collected with a strategy that recognizes exposure variability, or by using worst-case assumptions and estimation techniques to evaluate the highest foreseeable levels to which employees may be exposed.

10.4.2.4. The use of safety factors may be necessary to account for uneven dispersion of the contaminant in the air and the proximity of the worker to the emission source.

10.5. The RPO 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. The hazard evaluation may include:

10.5.1. Identification and development of a list of hazardous substances used in the workplace, by department, or work process.

10.5.2. Review of work processes to determine where potential exposures to these hazardous substances may occur.

10.5.2.1. Surveying the workplace, reviewing process records, and talking with employees and supervisors shall conduct this review.

10.5.3. Exposure monitoring to quantify potential hazardous exposures.

10.6. The results of hazard evaluations performed at MPC are located in Attachment C.

10.6.1. Please be advised that due to the range of projects that MPC employees are involved in, it is impossible to anticipate all respiratory hazards and assess them beforehand.

10.6.1.1. Therefore, employees will be trained on proper hazard assessment and respirator selection.

10.7. If an employee feels that respiratory protection is needed during a particular activity and they are unsure as to the need for and type of respiratory protective equipment, they are to contact the RPO.

10.7.1. The RPO will evaluate the potential hazard or arrange for outside assistance as necessary.

10.7.2. The RPO will then communicate the results of the hazard assessment back to the employees.

10.7.3. If it is determined that respiratory protection is necessary, all other elements of this program will be in effect for those tasks and this program will be updated accordingly.

11. SELECTION

11.1. In order to select an appropriate respirator you must:

11.1.1. Conduct an exposure assessment to determine the type and amount of hazardous exposure.

11.1.2. Take into account the factors that can influence respirator selection such as job-site and worker characteristics.

11.1.3. Understand the assigned protection factors.

11.1.4. Know the various kinds of respirators and their relevant characteristics.

11.2. MPC will select only NIOSH-certified respirators.

11.2.1. The respirator shall be used in compliance with the conditions of its certification.

11.3. MPC will select respirators from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

11.4. Once the hazard assessment is done the respirator is selected based on the following factors:

11.4.1. Identity of contaminant,

11.4.2. Chemical state and physical form of contaminant,

11.4.3. Concentration of contaminant,

11.4.4. Warning properties of contaminant,

11.4.5. Oxygen content,

11.4.6. The limitations and capabilities of the respiratory protective equipment,

11.4.7. The governmental approvals, manufacturer's tests and facility experience with specific brands of respiratory protective equipment,

11.4.8. Tasks to be performed or emergency conditions that are likely to be encountered,

11.4.9. Facial feature of user,

11.4.10. The protection factor of the respirator, and

11.4.11. The Permissible Exposure Limit (PEL) or Threshold Limit value (TLV) of the contaminant.

11.5. If MPC is unable to identify or reasonably estimate the employee exposure, the atmosphere will be considered to be Immediately Dangerous to Life and Health (IDLH).

11.5.1. Refer to the IDLH section of this program for more information.

12. PROTECTION FACTORS

12.1. The Assigned Protection Factor (APF) of a respirator reflects the level of protection that a properly functioning respirator would be expected to provide.

12.1.1. APF of 10 for a respirator means that a user could expect to inhale no more than one tenth of the airborne contaminant present.

12.2. To determine if a respirator can be used multiply the protection factor of the respirator type listed below to the PEL or TLV of the contaminant.

12.2.1. If the result of the multiplication is less than the actual concentration of the contaminant in the area AND less than the IDLH of the contaminant; the respirator can be used.

12.3. The allowable limits of the contaminants is listed in:

12.3.1. PEL: Title 8 GISO Section 5155.

12.3.2. TLV: American Conference of Governmental Industrial Hygienists (ACGIH) TLV booklet.

12.4. The APF for the following APRs are listed:

12.4.1. Filtering Facepiece: APF 10

12.4.2. Half-Mask: APF 10

12.4.3. Full-Facepiece: APF 50

12.5. The APF for the following Powered Air Purifying Respirators (PAPR) are listed:

12.5.1. Half-Mask: APF 50

12.5.2. Full-Facepiece: APF 250

12.5.3. Loose Fitting Facepiece: APF 25

12.5.4. Hood or Helmet: APF 25

12.6. The APF for the following Supplied Air equipment are listed:

12.6.1. Half-Mask-Demand: APF 10

12.6.2. Half-Mask-Continuous: APF 50

12.6.3. Half-Mask-Pressure Demand: APF 1000

12.6.4. Full-Facepiece Demand: APF 50

12.6.5. Full-Facepiece Continuous Flow: APF 250

12.6.6. Full-Facepiece Pressure Demand: APF 1000

12.6.7. Loose Fitting Facepiece: APF 25

12.6.8. Hood or Helmet: APF 25

12.7. The APF for the following Self Contained Breathing Apparatus (SCBA) is listed as:

12.7.1. Demand: APF 50

12.7.2. Pressure Demand: APF 10,000

13. AIR PURIFYING RESPIRATORS

13.1. Air Purifying Respirators (APR) have filters, cartridges, or canisters that remove contaminants from the air by passing the ambient air through the air-purifying element before it reaches the user.

13.2. Particulate respirator cartridges capture particles in the air, such as dusts, mists, and fumes.

13.2.1. These cartridges do not protect against gases or vapors.

13.2.2. They generally become more effective as particles accumulate on the filter and plug spaces between the fibers.

13.2.3. Filters should be replaced when user finds it difficult to breath through them.

13.2.4. The most common type of cartridge is the HEPA cartridge color-coded purple.

13.3. Gas and vapor cartridges are normally used when there are only hazardous gases and vapors in the air.

13.3.1. They are made to protect against specific gases or vapors.

13.3.2. They do not protect against airborne particles.

13.3.3. They provide protection only as long as the filter's absorbing capacity is not depleted.

13.3.4. The service life of the filter depends upon many factors and can be estimated in various ways.

13.4. Combination cartridges are normally used in atmospheres that contain hazards of both particulates and gases.

13.4.1. These cartridges have both particulate filters and gas/vapor filters.

13.5. Any filter certified under NIOSH current Part 84 requirements are generally acceptable for negative pressure respiratory protection against all aerosols, mists, fumes, and dusts subject to the filter stated limitations.

13.5.1. These filters will be labeled with a letter N, R or P and a number representing the efficiency, 95, 99 or 100.

13.5.2. An exception for usability occurs when a substance specific CAL/OSHA standard, e.g. lead, requires specific filter efficiency.

13.5.3. If one of these standards requires a High Efficiency Particulate Air (HEPA) filter to comply with its requirement, the user should select a filter with a labeled efficiency number of 100.

13.6. MPC has selected North respirators as the company authorized respirator brand.

13.6.1. Draeger full-face respirators as well as cartridges can be obtained by contacting the RPO.

13.6.2. The instruction manual for the full-face and half-face respirator is in Attachment E.

13.7. The cartridge color codes are as follows:

13.7.1. Organic vapors: Black

13.7.2. Acid gases: White

13.7.3. Organic vapors and acid gases: Yellow

13.7.4. Ammonia: Green

13.7.5. HEPA Filter: Purple

13.7.6. Organic vapor/acid gas/HEPA: Yellow and purple

14. LIMITATIONS

14.1. Air purifying respirators have the following limitations:

14.1.1. Air purifying respirators are not to be worn when the concentration of the contaminant is at or above it's IDLH level.

14.1.2. APRs cannot be worn in oxygen deficient atmospheres (less than 19.5% oxygen).

14.1.3. The manufacturer of the selected APR must be the manufacturer of the air purifying cartridges, filters, and replacement parts for the respirators.

14.1.3.1. No other brand name accessories can be used with Drager or Scott brand equipment.

14.1.4. In case of exposure to formaldehyde only full-face respirators are to be used.

14.1.5. Do not use an APR for protection against chemicals that do not have a good warning property:

14.1.5.1. Chemicals that have good warning properties can cause irritation, or can be smelled/tasted at concentrations below the PEL/TLV of the contaminant and do not cause olfactory fatigue.

14.1.6. The following is a partial list of gaseous materials for which air-purifying respirators may NOT be used for respiratory protection, regardless of concentration or exposure time:

14.1.6.1. Acrolein,

14.1.6.2. Arsine,
14.1.6.3. Bromine,
14.1.6.4. Carbon Monoxide,
14.1.6.5. Dimethylaniline,
14.1.6.6. Dimethyl Sulfate,
14.1.6.7. Hydrogen Cyanide,
14.1.6.8. Hydrogen Selenide,
14.1.6.9. Isocyanate Compounds,
14.1.6.10. Methylene Bisphenyl Isocyanate (MDI),
14.1.6.11. Toluene Diisocyanate (TDI),
14.1.6.12. Methyl Bromide,
14.1.6.13. Methyl Chloride,
14.1.6.14. Methylene Chloride,
14.1.6.15. Nickel Carbonyl,
14.1.6.16. Nitrogen Oxides,
14.1.6.17. Nitroglycerin,
14.1.6.18. Nitromethane,
14.1.6.19. Ozone,
14.1.6.20. Phosgene,
14.1.6.21. Phosphine,
14.1.6.22. Phosphorus Trichloride,
14.1.6.23. Stibine, and
14.1.6.24. Sulfur Chloride.
14.1.6.25. THIS LIST IS NOT COMPLETE AND DOES NOT REPLACE A COMPLETE EVALUATION OF THE WORKPLACE AND ITS CONTAMINANTS BY AN INDUSTRIAL HYGIENIST.

14.1.7. Do not use any air-purifying respirator for protection against:

14.1.7.1. Air containments other than those listed on the cartridge.
14.1.7.2. Concentrations greater than the maximum allowed by the manufacturer.
14.1.7.3. Atmospheres containing oil unless a NIOSH "R" or "P" class filter is used.
14.1.7.4. Gases or vapors, which generate heats due to reaction with the sorbent material in the cartridge.
14.1.7.5. Gases or vapors, which are not absorbed by the sorbent material in the cartridge.

14.1.8. The proper cartridge must be selected to provide adequate protection.

14.1.9. The cartridge usually expires two years after the manufacture date stamped on the cartridge.

14.1.9.1. The expiration date only applies as long as the cartridge is still inside of its original plastic wrap.

14.1.9.2. Mechanical filtration cartridges do not have expiration dates.

14.1.10. How long a cartridge will last depend on:

14.1.10.1. How fast you breath,

14.1.10.2. How long the cartridge has been opened,

14.1.10.3. Moisture content of air breathed,

14.1.10.4. Concentration of the contaminant, and

14.1.10.5. Outside temperature.

14.2. Respiratory protective equipment may not provide adequate protection against gases, vapors and mists of certain substances that can be absorbed through the skin.

14.2.1. Impervious protective clothing providing whole body coverage may be required under these circumstances.

14.3. All personnel should be aware that failure to properly use and maintain respiratory protective equipment might result in injury or death.

15. NIOSH CERTIFICATION

15.1. MPC shall only purchase respirators that are NIOSH approved.

15.2. NIOSH certifies three classes of particulate respirators in three filter efficiencies for a total of nine new respirator categories.

15.2.1. The new classes for particulate respirators are:

15.2.1.1. N for non-oil particulates;

15.2.1.2. R for oil and non oil particulates with an eight hour maximum use stipulation; and

15.2.1.3. P for oil and non-oil particulates with no service time restriction.

15.2.2. Each class is further categorized by efficiency as either

15.2.2.1. 95 percent;

15.2.2.2. 99 percent; or

15.2.2.3. 100 percent (actually 99.97 percent).

15.3. Dust/Mist and Dust/Mist/Fume Filters may only be used for particulates with mass median aerodynamic diameters (MMAD) of at least 2 micrometers.

15.3.1. Welding fumes and silica may be examples of dust particulates that are less than 2 micrometers.

15.3.2. If the MMAD cannot be determined, a HEPA filter, or a filter certified by NIOSH under 42 CFR 84 (N95 or higher) must be selected.

15.3.3. R100 and P100 filters can be used to replace them.

15.4. All filters, cartridges, and canisters must be labeled with the appropriate NIOSH approval label.

15.4.1. The label must not be removed or defaced while it is in use.

16. FIT CHECK

16.1. For all tight-fitting respirators, MPC will ensure that employees perform a user seal check each time they put on the respirator to ensure that an adequate seal is achieved using the procedures in:

16.1.1. Appendix B-1 of Cal/OSHA GISO 5144 "User Seal Check Procedures" or

16.1.2. Those recommended by the respirator manufacturer that MPC demonstrates are as effective as those in Appendix B-1 of Cal/OSHA GISO 5144.

16.2. APR positive and negative fit checks shall be done each time after the APR is donned.

16.3. To perform a negative fit check on an APR, close off the inlet opening of the canister or cartridge(s) by covering them with the palm of the hand(s) or by replacing the filter seal(s),

16.3.1. The design of the inlet opening of some cartridges cannot be effectively covered with the palm of the hand.

16.3.1.1. Covering the inlet opening of the cartridge with a thin latex or nitrile glove can perform the test.

16.3.2. Inhale gently so that the facepiece collapses slightly, and hold the breath for ten seconds.

16.3.3. If the facepiece remains in its slightly collapsed condition and no inward leakage of air is detected, the tightness of the respirator is considered satisfactory.

16.3.4. To perform a positive fit check, cover the exhalation valve and exhale gently into the facepiece.

16.3.4.1. The face fit is considered satisfactory if a slight positive pressure can be built up inside the facepiece without any evidence of outward leakage of air at the seal.

16.3.4.2. For most respirators this method of leak testing requires the wearer to first remove the exhalation valve cover before closing off the exhalation valve and then carefully replacing it after the test.

16.4. To perform a negative fit check on an SCBA, cover the inhalation valves on the face piece or the hose.

16.4.1. Positive fit checks cannot usually be done on an SCBA.

16.5. Fit checks are not substitutes for fit tests.

17. FIT TESTING

17.1. MPC shall ensure that employees using tight-fitting facepiece respirators pass a fit test:

17.1.1. Prior to initial use of the respirator,

17.1.2. Whenever a different respirator facepiece (size, style, model or make) is used, and

17.1.3. At least annually thereafter.

17.2. MPC will conduct an additional fit test whenever the employee reports, or the PLHCP, supervisor, or RPO makes visual observations of changes in the employee's physical condition that could affect respirator fit.

17.2.1. Such conditions include, but are not limited to, facial scarring, dental changes, cosmetic surgery, or an obvious change in body weight.

17.3. If after passing a fit test the employee subsequently notifies the MPC, RPO, supervisor, or PLHCP that the fit of the respirator is unacceptable, the employee shall be given a reasonable opportunity to select a different respirator facepiece and to be retested.

17.4. The fit test shall be administered using a CAL/OSHA accepted fit-test protocol.

17.4.1. MPC uses the TSI PortaCount to perform quantitative fit testing.

17.5. Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators shall be accomplished by performing quantitative fit testing in the negative pressure mode, regardless of the mode of operation (negative or positive pressure) that is used for respiratory protection.

17.5.1. Quantitative fit testing of these respirators shall be accomplished by modifying the facepiece to allow sampling inside the facepiece in the breathing zone of the user, midway between the nose and mouth.

17.5.1.1. This requirement shall be accomplished by installing a permanent sampling probe onto a surrogate facepiece, or by using a sampling adapter designed to temporarily provide a means of sampling air from inside the facepiece.

17.5.1.2. Any modifications to the respirator facepiece for fit testing shall be completely removed, and the facepiece restored to NIOSH-approved configuration, before that facepiece can be used in the workplace.

17.6. Fit-testing is not required for the following:

17.6.1. Mouthbit Respirators,

17.6.2. Loose-fitting Respirators (e.g., hoods, helmets),

17.6.3. Dust masks (filtering facepiece),

17.6.4. Voluntary use respirators, and

17.6.5. Escape air packs.

18. FIT-TESTING PROTOCOL

18.1. Employees are to be fit tested on each make, model, and size of respirator that they are expected to use.

18.2. Respirators used in fit testing and training shall be cleaned and disinfected after each use.

18.3. Quantitative fit testing is preferred over qualitative.

18.3.1. However, due to field conditions banana oil or irritant smoke qualitative fit testing may be the only available method.

18.4. The test subject shall be allowed to pick the most acceptable respirator from a sufficient number of respirator models and sizes so that the respirator is acceptable to, and correctly fits, the user.

18.5. Prior to the selection process, the test subject shall be shown how to put on a respirator, how it should be positioned on the face, how to set strap tension and how to determine an acceptable fit.

18.5.1. This instruction may not constitute the subject's formal training on respirator use, because it is only a review.

18.6. A mirror shall be available to assist the subject in evaluating the fit and positioning of the respirator.

18.7. The test subject shall be informed that:

18.7.1. Each respirator represents a different size and shape, and if fitted and used properly, will provide adequate protection.

18.7.2. He/she is being asked to select the respirator that provides the most acceptable fit.

18.8. The test subject shall be instructed to hold each chosen facepiece up to the face and eliminate those that obviously do not give an acceptable fit.

18.8.1. The more acceptable facepieces are noted in case the one selected proves unacceptable; the most comfortable mask is donned and worn at least five minutes to assess comfort.

18.9. If the test subject is not familiar with using a particular respirator, the test subject shall be directed to don the mask several times and to adjust the straps each time to become adept at setting proper tension on the straps.

18.10. Assessment of comfort shall include a review of the following points with the test subject and allowing the test subject adequate time to determine the comfort of the respirator:

18.10.1. Position of the mask on the nose;

18.10.2. Room for eye protection;

18.10.3. Room to talk;

18.10.4. Position of mask on face and cheeks;

18.10.5. Assistance in assessing comfort can be given by the instructor or person performing the fit test.

18.11. The following criteria shall be used to help determine the adequacy of the respirator fit:

18.11.1. Chin properly placed;

18.11.2. Adequate strap tension, not overly tightened;

18.11.3. Fit across nose bridge;

18.11.4. Respirator of proper size to span distance from nose to chin;

18.11.5. Tendency of respirator to slip;

18.11.6. Self-observation in mirror to evaluate fit and respirator position.

18.12. The test subject shall conduct a user seal check, either the negative and positive pressure seal checks described in the Fit Check section of this program or those recommended by the respirator manufacturer which provide equivalent protection.

18.12.1. Before conducting the negative and positive pressure checks, the subject shall be told to seat the mask on the face by moving the head from side-to-side and up and down slowly while taking in a few slow deep breaths.

18.12.2. Another facepiece shall be selected and retested if the test subject fails the user seal check tests.

18.13. Fit testing shall not be conducted if there is any hair growth between the skin and the facepiece sealing surface, such as:

18.13.1. Stubble beard growth;

18.13.2. Beard;

18.13.3. Mustache or side burns that cross the respirator sealing surface.

18.14. Any type of apparel, which interferes with a satisfactory fit, shall be altered or removed.

18.15. If a test subject exhibits difficulty in breathing during the tests, she or he shall be referred to a PLHCP, as appropriate, to determine whether the test subject can wear a respirator while performing her or his duties.

18.16. Prior to the commencement of the fit test, the test subject shall be given a description of the fit test and the test subject's responsibilities during the test procedure.

18.16.1. The description of the process shall include a description of the test exercises that the subject will be performing.

18.16.2. The respirator to be tested shall be worn for at least 5 minutes before the start of the fit test.

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

18.18. The test subject shall perform exercises, in the test environment, in the following manner:

18.18.1. Normal breathing.

18.18.1.1. In a normal standing position, without talking, the subject shall breathe normally.

18.18.2. Deep breathing.

18.18.2.1. In a normal standing position, the subject shall breathe slowly and deeply, taking caution so as not to hyperventilate.

18.18.3. Turning head side to side.

18.18.3.1. Standing in place, the subject shall slowly turn his/her head from side to side between the extreme positions on each side.

18.18.3.2. The head shall be held at each extreme momentarily so the subject can inhale at each side.

18.18.4. Moving head up and down.

18.18.4.1. Standing in place, the subject shall slowly move his/her head up and down.

18.18.4.2. The subject shall be instructed to inhale in the up position (i.e., when looking toward the ceiling).

18.18.5. Talking.

18.18.5.1. The subject shall talk out loud slowly and loud enough so as to be heard clearly by the test conductor.

18.18.5.2. The subject can read from a prepared text such as the Rainbow Passage, count backward from 100, or recite a memorized poem or song.

18.18.6. Grimace.

18.18.6.1. The test subject shall grimace by smiling or frowning.

18.18.6.2. This applies only to quantitative fit testing; it is not performed for qualitative fit testing.

18.18.7. Bending over.

18.18.7.1. The test subject shall bend at the waist as if he/she were to touch his/her toes.

18.18.7.2. Jogging in place shall be substituted for this exercise in those tests environments such as shroud type fit test units that do not permit bending over at the waist.

18.18.8. Normal breathing.

18.18.8.1. Same as before.

18.19. Each test exercise shall be performed for one minute except for the grimace exercise, which shall be performed for at least 15 seconds.

18.20. The test subject shall be questioned by the test conductor regarding the comfort of the respirator upon completion of the protocol.

18.20.1. If it has become unacceptable, another model or size of a respirator shall be tried.

18.21. The respirator shall not be adjusted once the fit test exercises begin.

18.21.1. Any adjustment voids the test, and the fit test must be repeated.

18.22. The fit test shall be redone if the employee:

18.22.1. Gains or loses excessive weight.

18.22.2. The brand, size or type of respirator to be used is changed.

18.23. The results of the fit test shall be placed in the employee's file.

18.24. 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.

18.24.1. Employees are not permitted to wear headphones, jewelry, or other articles that may interfere with the facepiece-to-face seal.

18.25. If a respirator is issued to an employee for their use only:

18.25.1. The respirator should be marked to indicate to whom it belongs.

18.25.1.1. This mark must not interfere with the respirator performance.

19. GENERAL USE PROCEDURES

19.1. MPC will:

19.1.1. Attempt to prevent employees from removing respirators in hazardous environments,

19.1.2. Take actions to ensure continued effective respirator operation throughout the work shift.

19.2. MPC will not permit respirators with tight-fitting facepieces to be worn by employees who have:

19.2.1. Facial hair (more than one day's worth of beard growth, Mustache or sideburns which cross the respirator sealing surface) that comes between the sealing surface of the facepiece and the face or

19.2.2. Facial hair that may interfere with the valve function.

19.3. If an employee wears corrective glasses or goggles or other personal protective equipment, MPC will ensure that such equipment is worn in a manner that does not interfere with the seal of the facepiece to the face of the user.

19.3.1. A spectacle kit for respirators can be obtained from the RPO for the insertion of the employee's prescription.

19.4. MPC will ensure that employees leave the respirator use area:

19.4.1. To wash their faces and respirator facepieces as necessary to prevent eye or skin irritation associated with respirator use; or

19.4.2. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece; or

19.4.3. To replace the respirator or the filter, cartridge, or canister elements.

19.5. If the employee detects vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece, MPC will replace or repair the respirator before allowing the employee to return to the work area.

20. RESPIRATOR MALFUNCTION

20.1. Respirators that are defective or have defective parts shall be taken out of service immediately.

20.2. If, during an inspection, an employee discovers a defect in a respirator, he/she is to bring the defect to the attention of his or her supervisor.

20.2.1. Supervisors will give all defective respirators to the RPO.

20.3. APR malfunction:

20.3.1. For any malfunction of an APR (e.g., such as breakthrough, facepiece leakage, or improperly working valve), the respirator wearer should inform his or her supervisor that the respirator no longer functions as intended, and go to the designated safe area to remove the respirator.

20.3.2. The supervisor must ensure that the employee receives the needed parts to repair the respirator, or is provided with a new respirator.

20.4. The RPO will decide whether to:

20.4.1. Temporarily take the respirator out of service until it can be repaired.

20.4.2. Perform a simple fix on the spot such as replacing a headstrap.

20.4.3. Dispose of the respirator due to an irreparable problem or defect.

20.5. 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.

21. IDLH PROCEDURES

21.1. IDLH conditions are considered to be:

21.1.1. Contaminant level at or above the IDLH value;

21.1.2. Oxygen level below 19.5%;

21.1.3. LEL levels above 10% of the LEL; and

21.1.4. Radiation levels above the allowable limits.

21.2. The RPO has identified that there are no areas at MPC that present the potential for IDLH conditions during normal operations.

21.2.1. However, IDLH conditions may arise as a result of an emergency such as a chemical spill/leak or fire.

21.3. Field conditions that may contain an IDLH hazard include:

21.3.1. Confined spaces.

21.3.1.1. In such cases, workers will follow the permit required confined space entry procedures specified in the MPC Confined Space Entry Program.

21.3.2. Chemical storage areas;

21.3.3. Hazardous materials release.

22. SELF CONTAINED BREATHING APPARATUS

22.1. MPC employees will NOT be involved in work that involves the use of a Self Contained Breathing Apparatus (SCBA).

23. SANITATION

23.1. Appendix B-2 of Cal/OSHA GISO 5144 "Respirator Cleaning Procedures" requires MPC to develop procedures and schedules for cleaning, and disinfecting respirators:

23.1.1. These procedures are general in nature, and MPC as an alternative may use the cleaning recommendations provided by the respirator manufacturer, provided such procedures are as effective as those listed here in Appendix B-2 of the regulation.

23.1.2. Equivalent effectiveness simply means that the procedures used must:

23.1.2.1. Accomplish the objectives set forth in Appendix B-2, i.e.,

23.1.2.2. Ensure that the respirator is properly cleaned and disinfected in a manner that prevents damage to the respirator, and

23.1.2.3. Not cause harm to the user.

23.2. Routinely used respiratory protective equipment shall be regularly cleaned, inspected and sanitized by the user.

23.2.1. Emergency response equipment is to be cleaned after each use or monthly whichever comes first.

23.2.2. Respirators used in fit testing and training shall be cleaned and disinfected after each use.

23.3. The following procedures or the manufacturer's recommendations are to be followed for the sanitation of APR:

23.3.1. Remove the filter cartridges before washing the respirator and discard as necessary.

23.3.2. Disassemble facepieces by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer.

23.3.3. Wash components in warm (100 degrees Fahrenheit maximum) water with a mild detergent or with a cleaner recommended by the manufacturer.

23.3.3.1. Do not use organic solvents.

23.3.4. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

23.3.5. Rinse components thoroughly in clean, warm (100 degrees F maximum), preferably running water.

23.3.6. Drain.

23.3.7. Allow to air dry in a clean, chemical and dust-free area.

23.3.8. Components should be hand-dried with a clean lint-free cloth or air-dried.

23.3.9. Reassemble facepiece, replacing filters, cartridges, and canisters where necessary.

23.3.10. Test the respirator to ensure that all components work properly.

23.3.11. After the respirator has air-dried or wiped down place the respirator in a dry plastic bag that is airtight.

23.4. When the cleaner used does not contain a disinfecting agent, respirator components should be immersed for two minutes in one of the following:

23.4.1. Hypochlorite solution (50 PPM of chlorine) made by adding approximately one milliliter of laundry bleach to one liter of water at 100 degrees F); or,

23.4.2. Aqueous solution of iodine (50 PPM iodine) made by adding approximately 0.8 milliliters of tincture of iodine (6-8 grams ammonium and/or potassium iodide/100 cc of 45% alcohol) to one liter of water at 100 degrees F, or

23.4.3. Other commercially available cleansers of equivalent disinfectant quality when used as directed, if their use is recommended or approved by the respirator manufacturer.

23.5. The importance of thorough rinsing cannot be overemphasized.

23.5.1. Detergents or disinfectants that dry on facepieces may result in dermatitis.

23.5.2. In addition, some disinfectants may cause deterioration of rubber or corrosion of metal parts if not completely removed.

23.6. Respiratory protective equipment shall not be shared among employees unless it is properly sanitized.

23.6.1. Do not use alcohol wipes to clean respirators being shared with others because alcohol does not kill viruses.

23.6.2. Use specialty wipes such as Sani-cloth to clean respirators.

23.7. The RPO will ensure an adequate supply of appropriate cleaning and disinfecting material is available.

23.7.1. To obtain such supplies contact the RPO or your supervisor.

24. MAINTENANCE

24.1. MPC will provide each respirator user with a respirator that is clean, sanitary, and in good working order.

24.2. MPC will ensure that respirators that fail an inspection or are otherwise found to be defective are removed from service, and are discarded or repaired or adjusted in accordance with the following procedures:

24.2.1. 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;

24.2.2. Repairs shall be made according to the manufacturer's recommendations and specifications for the type and extent of repairs to be performed; and

24.2.3. Reducing and admission valves, regulators, and alarms shall be adjusted or repaired only by the manufacturer or a technician trained by the manufacturer.

24.2.4. Only the manufacturer will conduct repairs to regulators or alarms of SAR.

24.3. Repair of respiratory protective equipment by the user is limited to:

24.3.1. Changing cartridges, filters, lenses and head straps.

24.3.1.1. Replacement parts shall be from the original equipment manufacturer.

24.4. Replace the air purifying cartridge when:

24.4.1. Experiencing difficulty in breathing due to build up of particulate on the cartridge filter.

24.4.1.1. This decreases the respirator efficiency due to increased breathing resistance.

24.4.2. Able to smell or taste the contaminant as a result of breakthrough or poor fit.

24.4.3. Nose, eye or throat irritation develops while wearing the respirator.

24.4.4. Required to do so on a specific time basis (depending on the chemical) even without breakthrough.

24.5. Worn or deteriorated parts will be replaced prior to use.

24.6. 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.

25. CHANGE SCHEDULES

25.1. In the past CAL/OSHA allowed MPC to use odor detection as a way to determine when a cartridge needed to be changed.

25.1.1. The new standard prohibits the use of warning properties as the sole basis for determining change schedules.

25.1.2. However respirator users should be trained to understand that abnormal odor or irritation is evidence that respirator cartridges need to be replaced.

25.2. If a cartridge/canister air-purifying respirator for the protection against gases and vapors does not have an End of Service Life Indicator (ESLI), then MPC must implement a cartridge/canister change schedule based on objective information that will ensure the cartridges/canisters are changed before the end of their service life.

25.2.1. The purpose of a change schedule is to establish the time period for replacing respirator cartridges and canisters; this is critical to preventing contaminants from respirator breakthrough, and thereby over-exposing workers.

25.2.2. Where an effective change schedule is implemented, air-purifying gas and vapor respirators may be used for hazardous chemicals, including those with few or no warning properties.

25.3. To establish a change schedule the following will be considered:

25.3.1. Humidity;

25.3.2. Chemical mixtures.

25.4. Change schedules should err on the side of caution to protect workers.

25.5. CAL/OSHA does NOT:

25.5.1. Require complex mathematical calculations to be endlessly computed

25.5.2. Consider the adoption of somebody else's change schedule without site considerations as sufficient.

25.5.3. Accept a change schedule that is based on the fact that the employee has seen no apparent adverse health effects.

25.6. The following chemical specific CAL/OSHA standards require the specific change out schedules as listed below:

25.6.1. Acrylonitrile 1910.1045(h)(2)(ii) end-of-service life or end of shift (whichever occurs first)

25.6.2. Benzene 1910.1028(g)(2)(ii) end-of-service life or beginning of shift (whichever occurs first)

25.6.3. Butadiene 1910.1051 (h)(2)(ii) every 1, 2 or 4 hours dependent on concentration according to the regulation and at beginning of each shift

25.6.4. Formaldehyde 1910.1048 (g)(2)(ii) - for cartridges every three hours or end of shift (whichever is sooner);

25.6.5. Vinyl chloride 1910.1017(g)(3)(ii) end-of-service life or end of shift in which they are first used (whichever occurs first)

25.6.6. Methylene chloride 1910.1052 (g)(2)(ii) - canisters may only be used for emergency escape and must be replaced after use.

25.7. If a respirator is used for emergency response always put on a new pair of cartridges and replace every 4 hours.

25.8. Change schedules for all other gases and vapors must be established and implemented by MPC.

25.8.1. Data and information relied upon to establish the schedule must be included in the written RPP.

25.8.2. CAL/OSHA has stated in the preamble to the final rule that MPC is not required to research and analyze experimental breakthrough data, but may obtain information from sources who have expertise and knowledge that can help MPC to develop reasonable change schedules.

25.9. The following methods can be used to determine the changeout schedule:

25.9.1. Manufacturers Objective Data;

25.9.2. Experimental Methods;

25.9.3. Mathematical Predictive Modeling;

25.9.4. Analogous Chemical Structures; or

25.9.5. Workplace Simulations.

25.10. Manufacturers Objective Data:

25.10.1. Respirator cartridge model-specific objective data that is available from the manufacturer or through a distributor may be used to establish change schedules.

25.10.2. Objective data may be presented in tabular or graphical format or simply provided verbally over a manufacturer's telephone help line.

25.10.3. Some manufacturers have developed elaborate computer programs available on the Internet that provide the necessary objective data to the user.

25.11. Experimental Methods:

25.11.1. Experimental breakthrough-time data from a laboratory based on worst case testing of simulated workplace conditions.

25.11.2. This method can provide fairly accurate service life data compared to other available methods.

25.12. Mathematical Predictive Modeling:

25.12.1. Is based on predictive equations.

25.12.2. These models are typically complex and require considerable expertise to apply.

25.12.3. They also require some proprietary information from the respirator manufacturer.

25.13. Analogous Chemical Structures:

25.13.1. MPC will rely on service life values from other chemicals having analogous chemical structure to the contaminant under evaluation for breakthrough.

25.13.2. In some cases a chemical with known migration may reasonably be anticipated to act as a surrogate for a similar chemical that would have less rapid migration

25.13.3. MPC will assume that a heavier, less volatile compound than another in the same chemical series that had been tested for breakthrough would breakthrough no faster than the latter compound, such as benzene versus toluene.)

25.13.4. The use of this method requires a substantial amount of judgment and assumption of similar chemical properties.

25.13.5. The use of analogous chemical structures should be infallible as long as objective data or information for lower molecular weight compounds is used to predict the breakthrough times for higher molecular weight analogues containing only additional methyl or phenyl groups.

25.13.6. Data from higher molecular weight groups should not be used to predict the behavior of analogous substances with lower molecular weight.

25.13.7. This approach relies heavily on experimental data and expert analysis.

25.13.8. This method may be less accurate than others and should be used only when better information is not available.

25.14. Workplace Simulations:

25.14.1. Un-validated methods exist or are under development where the respirator cartridge is tested in the workplace in "real time" and under actual conditions of use.

25.14.2. Workplace air during representative conditions is drawn over the cartridge at a rate approximating normal breathing at a higher work rate.

25.14.3. An air sampling/analytic device would be placed on the other side of the filter to measure the time of breakthrough.

25.14.4. MPC can incorporate this type of testing into its air-monitoring program using sampling strategies established in their workplace.

25.14.5. In theory, these approaches should be an accurate method for determining change schedules and could accommodate fluctuating conditions of humidity, concentration, etc., to allow less conservative schedules that utilize a larger fraction of the true service life.

25.15. Change Schedules For Mixtures: Establishing cartridge service life for mixtures of contaminants is a complex task and one that requires considerable professional judgment to create a reasonable change schedule.

25.15.1. Cartridge service life for mixtures is best-determined using experimental methods.

25.15.2. The change schedule for a mixture should be based on reasonable assumptions that include a margin of safety for the worker wearing the respirator.

25.15.3. Where the individual compounds in the mixture have similar breakthrough times (i.e. within one order of magnitude), service life of the cartridge should be established assuming the mixture stream behaves as a pure system of the most rapidly migrating component or compound with the shortest breakthrough time (i.e., sum up the concentration of the components).

25.15.4. Where the individual compounds in the mixture vary by 2 orders of magnitude or greater, the service life may be based on the contaminant with the shortest breakthrough time.

25.16. Chemical Contaminant Migration:

25.16.1. Contaminants have a tendency to migrate through cartridge/canister sorbent material during periods of storage or non-use.

25.16.2. This is characteristic of the contaminant-carbon bed interaction for organic chemicals with boiling points below 65 Centigrade and would predictably shorten breakthrough times.

25.16.3. In cases where respirators are used for multiple days this could present an additional exposure to the respirator user.

25.16.4. Where contaminant migration is possible, respirator cartridges/canisters should be changed after every workshift where exposure occurs unless MPC has specific objective data to the contrary (desorption studies) showing the performance of the cartridge in the conditions and schedule of use/non-use found in the workplace.

25.17. Rules of Thumb:

25.17.1. Generalized rules or guidance can be generated from experimental work.

25.17.2. Presented below is a rule of thumb for estimating organic vapor service life found in Chapter 36 of the American Industrial Hygiene Association publication "The Occupational Environment Evaluation and Control".

25.17.3. If a chemical's boiling point is >70 C and the concentration is less than 200 PPM you can expect a service life of 8 hours at a normal work rate.

25.17.3.1. Humidity above 85% will reduce service life by 50%.

25.17.4. Service life is inversely proportional to work rate.

25.17.5. Reducing concentration by a factor of ten will increase service life by a factor of five.

25.17.6. These generalizations should only be used in concert with one of the other methods of predicting service life for specific contaminants.

25.17.7. If the breakthrough time is rapid (minutes), air-purifying respirators may not be feasible and supplied air respirators should be used.

25.18. After attaching a new cartridge mark the cartridge with the date and time that the cartridge was replaced.

26. STORAGE

26.1. When not in use, respirator and cartridges must be protected from:

26.1.1. Dust,

26.1.2. Direct sunlight,

26.1.3. Extreme temperatures,

26.1.4. Excessive moisture, and

26.1.5. Damaging chemicals.

26.2. Placing it in a zip-lock bag, fully sealing the bag, and keeping the bag in a clean, dry, shaded space can achieve this.

26.3. Respirators must be stored in a clean, dry area, and in accordance with the manufacturer's recommendations.

26.4. SCBA are to be stored in:

26.4.1. Manufacturer's portable storage boxes, or

26.4.2. Wall mounted SCBA storage cabinets.

26.5. Store extra cartridges in their original bag until needed for use.

26.5.1. Do not store cartridges that are exposed to poisons, asbestos or heavy metals in the same bag as the respirator.

26.6. All respirators shall be stored to prevent deformation of the facepiece and exhalation valve.

26.7. Emergency respirators shall be:

26.7.1. Kept accessible to the work area;

26.7.2. Stored in compartments or in covers that are clearly marked as containing emergency respirators; and

26.7.3. Stored in accordance with any applicable manufacturer instructions.

27. INSPECTION

27.1. The user before each use and during each cleaning shall inspect routinely used respiratory protective equipment.

27.2. APR should be inspected according to the following procedure:

27.2.1. Remove the APR from its storage bag.

27.2.2. Make sure that the face piece is clean.

27.2.3. Inspect the straps, inhalation valves and inhalation valve.

27.2.3.1. If the exhalation valve is missing take the unit out of service.

27.2.3.2. If the straps are damaged remove from service.

27.2.4. Make sure there are fresh cartridges (sealed in the manufacturer's bag) available.

27.2.5. Put on the unit to make sure that the unit works (no need to put on the cartridges).

27.2.6. Sanitize the facepiece using Sani-Cloth wipes or wash the facepiece per manufacturer's recommendation.

27.2.7. Make sure that all straps on the facepiece are loose.

27.2.8. Initial the inspection form under each entry after placing the unit back in its bag.

27.2.9. Keep the Inspection form in the bag.

27.3. During the inspection look for the following conditions:

27.3.1. Face piece: Distortion, cracks, tears, or holes,

27.3.2. Straps: breaks or tears, broken buckles,

27.3.3. Valves: residue or dirt, cracks or tears in valve material,

27.3.4. Cartridge fit: approval designation, gaskets, cracks or dents in housing, proper cartridge for hazard,

27.3.5. Respirator function,

27.3.6. Tightness of connections, and

27.3.7. Elastomeric parts for pliability and signs of deterioration.

27.4. If the equipment is damaged, ripped, warped or cracked, do not use the equipment.

27.4.1. Report any damage to your supervisor or the RPO.

28. VOLUNTARY RESPIRATOR USE

28.1. Where respirator use is not required:

28.1.1. MPC will provide respirators at the request of employees or permit employees to use their own respirators, if MPC determines that such respirator use will not in itself create a hazard.

28.1.2. If MPC determines that voluntary respirator use is permissible, the RPO will provide voluntary respirator users with the form contained in Attachment F of this program ("Information for Employees Using Respirators When Not Required Under the Standard");

28.1.2.1. Merely posting Attachment F is not considered adequate.

28.1.3. MPC will implement those elements of a written RPP necessary to ensure that any employee using a respirator voluntarily is medically able to use that respirator, and that the respirator is cleaned, stored, and maintained so that its use does not present a health hazard to the user.

28.1.3.1. Exception: MPC is not required to include in a written RPP those employees whose only use of respirators involves the voluntary use of filtering facepieces (dust masks).

28.2. If MPC allows the voluntary use of respirators other than filtering facepieces, the costs associated with ensuring the respirator itself does not create a hazard, such as medical evaluations and maintenance must be provided at no cost to the employee.

28.2.1. Employees choosing to wear an APR must comply with the RPP procedures for Medical Evaluation, Respirator Use, and Cleaning, Maintenance and Storage.

28.2.2. Fit testing is not required for voluntary use of respirators.

28.3. Employees using respirators on a voluntary basis must sign that they have received a copy of Attachment F.

28.3.1. Place a copy of the signed form in Attachment G.

29. DISTRIBUTION

29.1. Only the RPO is authorized to distribute respiratory protective equipment.

29.2. When a respirator is being issued to an employee (other than emergency response equipment) document the following:

29.2.1. Brand: Example Drager,

29.2.2. Type: Example half-face APR for production personnel and full-face APR for ERT members.

29.2.3. Size: example S, M, L, and

29.2.4. Identity of the person receiving the respirator.

29.3. Respiratory protective equipment may be obtained from the RPO upon:

29.3.1. Obtaining a medical evaluation,

29.3.2. Completing the respiratory protection training program,

29.3.3. Passing the respirator fit test.

30. INDUSTRIAL HYGIENE MONITORING

30.1. The RPO will be responsible for determining if industrial hygiene monitoring is needed for materials or processes that are new to MPC.

30.1.1. If the need is perceived for industrial hygiene monitoring, the RPO or consultant will perform the necessary air monitoring.

30.2. Appropriate surveillance shall be maintained of work area conditions and degree of employee exposure or stress.

30.2.1. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, MPC will reevaluate the continued effectiveness of the respirator or the need for respirators.

31. PROGRAM EVALUATION

31.1. The RPO will:

31.1.1. Conduct evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective on an annual basis.

31.1.2. Regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems.

31.1.3. The evaluations will include periodic consultations with supervisors of employees who use respirators

31.2. The following issues will be considered during the annual evaluation:

31.2.1. Respirator fit (including the ability to use the respirator without interfering with effective workplace performance);

31.2.2. Appropriate respirator selection for the hazards to which the employee is exposed;

31.2.3. Proper respirator use under the workplace conditions the employee encounters;

31.2.4. Proper respirator maintenance;

31.2.5. Air monitoring; and

31.2.6. Review of records.

31.3. Problems identified during the evaluation should be noted in a report to management.

31.3.1. Any problems that are identified during this assessment shall be evaluated and corrected if necessary.

31.3.2. The report should list plans to correct deficiencies in the respirator program and target dates for the implementation of those corrections.

31.3.3. The RPP shall be updated as necessary to reflect those changes in workplace conditions that affect respirator use.

32. DOCUMENTATION AND RECORDKEEPING

32.1. CAL/OSHA requires MPC to establish and retain written information regarding:

32.1.1. Medical evaluations,

32.1.2. Training,

32.1.3. Fit testing, and

32.1.4. The respirator program.

32.2. This information will facilitate:

32.2.1. Employee involvement in the respirator program,

32.2.2. Assist MPC in auditing the adequacy of the program, and

32.2.3. Provide a record for compliance determinations by CAL/OSHA.

32.3. Records of medical evaluations required by this section must be retained and made available in accordance with GISO §3204 and 29 CFR 1910.120.

32.4. MPC will maintain a record of fit tests administered to an employee including:

32.4.1. The name or identification of the employee tested;

32.4.2. Type of fit test performed;

32.4.3. Specific make, model, style, and size of respirator tested;

32.4.4. Date of test;

32.4.5. The pass/fail results for QLFTs or the fit factor and strip chart recording or other recording of the test results for QNFTs; and

32.4.6. Fit test records shall be retained for respirator users until the next fit test is administered.

32.5. Written materials required to be retained under this subsection shall be made available upon request to affected employees and to CAL/OSHA for examination and copying.

32.6. The following records will be kept in the respiratory protective equipment user's personnel file:

32.6.1. Respirator fit test form;

32.6.2. Medical clearance; and

32.6.3. Respiratory Protection training records.

32.7. The following records will be kept by the RPO:

32.7.1. Training records; and

32.7.2. Copy of each version of the written RPP.

32.8. The inspection records for emergency respiratory protective equipment will be kept on the unit or its storage container.

32.9. A written copy of this program and the CAL/OSHA standard is kept in the RPO's office and is available to all employees who wish to review it.

32.10. These records will be updated:

32.10.1. As new employees are trained,

32.10.2. As existing employees receive refresher training, and

32.10.3. As new fit tests are conducted.

32.11. The completed medical questionnaire and the physician's documented findings are confidential and will remain at the physician's office.

32.11.1. MPC will only retain the physician's written recommendation regarding each employee's ability to wear a respirator referred to as the respirator medical clearance.

33. PROGRAM REVIEW

33.1. This program will be reviewed and approved each year.

33.1.1. Reviewer will ensure to update the signatory cover page and track revisions in this section.

34. REVISION

34.1. Generated:

34.1.1. August 2, 2014

34.2. Updated:

34.2.1. November 14, 2016

34.2.2. May 22, 2021

Attachment A - Abbreviations & Definitions

Attachment B - Tasks Requiring Respiratory Protection

Attachment C - Hazard Evaluation Results

Attachment D - Medical Questionnaire

Attachment E - Half-Face & Full-Face Respirator Manual

Attachment F - Voluntary Use Handout

Attachment G - Signed Voluntary Use Handout