Connecticut Department of Transportation

Division of Occupational Health & Safety

Respiratory Protection Program
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Respiratory Protection Program

Introduction
The Department of Transportation (CTDOT) has an obligation to protect the health and well-being of its employees from the potential hazards of breathing contaminated air during their daily work assignments. As required under the Occupational Safety and Health Administration (OSHA) Standard 1910.134, the following is the CTDOT written Respiratory Protection Program.

Although contaminated air is difficult to quantify, it is caused by certain dust, fog, smoke, mists, fumes, gases or vapors existing in the air that you breathe. These are all potential hazards found in the air that could affect the human body resulting in lung impairment or other diseases, some of which could be fatal.

In assisting employees to understand why protection against contaminated air is necessary, the following section explains briefly, hazardous conditions that may exist in the work environment which could pose a risk to the employees’ respiratory health and welfare.

Respiratory Hazards

Oxygen Deficiency. Air is normally 20.9 percent oxygen. If the oxygen content falls to 19.5 percent, the air is considered to be oxygen-deficient. If the air is oxygen deficient, after a short while the body would not have enough oxygen to survive. CTDOT workers with the exception of Aircraft Crash and Rescue Firefighters are strictly prohibited from entering oxygen deficient atmospheres. If there is any question regarding the air quality of a specific space, contact the CTDOT Division of Occupational Health and Safety (DOHS) prior to entry.

Air-Borne Particulate Contaminates. Continuous inhalation of air-borne contaminants may result in an interaction with the lungs that could potentially block oxygen from getting to your blood stream. This could result in lung damage or death.

Chemical Hazards. Hazardous chemicals such as some gases and vapors can be inhaled and absorbed into the blood stream, which could cause damage to some parts of the body including the lungs, liver, or kidneys which may be permanent.

Respiratory Protection

Methods. The prevention of atmospheric contamination at the work site should generally be accomplished if possible by acceptable engineering control measures (i.e., enclosure or confinement of the operation, local ventilation, and substitution of less toxic materials). When effective engineering controls are not feasible, it is appropriate to issue the proper respiratory protection to employees who are medically cleared and trained in the proper use of a respirator.

PPE Selection and Use. When respirators are used, their selection will be based upon the physical and chemical properties of the air contaminants and the concentration level likely to be encountered by the employee. Respirators only protect employees from inhalation hazards. Chemicals that may be absorbed through the skin should be prevented from coming into contact with the skin. Wear protective clothing when necessary.
Responsibilities

Management / Supervision. It is the responsibility of the management of each Bureau and Office to determine which specific assignments in those Bureaus and Offices require the use of respiratory protection. The CTDOT DOHS will assist with technical support and information on required protection on an as needed basis.

Supervision in each area is responsible for insuring that all personnel under their control are knowledgeable of the respiratory protection requirements for the areas in which they work. This includes identifying individuals who as a part of their job need to wear respirators, evaluating specific operations and worksites to determine the need to wear respirators, and conducting periodic inspections of equipment issued to employees under their jurisdiction. Supervisors are also responsible for insuring that their subordinates comply with all facets of the CTDOT Respiratory Protection Program, including respirator use, inspection and maintenance.

Employee / User. It is the responsibility of the employee or user to have an awareness of the respiratory protection requirements for their work areas. Employees are also responsible for wearing the appropriate respiratory equipment according to manufacturer’s instruction and for maintaining the equipment in a clean and operable condition. Additionally, the user is responsible for notifying their supervisor of any defective equipment immediately.

Respiratory Equipment Guidelines

Approved Respirators. Respirators certified by the National Institute for Occupational Safety & Health (NIOSH) & the Mine Safety and Health Administration (MSHA) will be purchased for and issued to designated CTDOT employees. The supervisor and employee shall check for certification numbers and hazard information on the filters/cartridges to ensure compliance with applicable regulations and user safety.

Operations Requiring. Many operations may require the use of respiratory protection. Specific environmental conditions must be evaluated by the supervisor prior to the beginning of an operation to determine the level of respiratory protection required. Any questions may be directed to the DOHS. The following are typical operations that would require the use of a respirator however; this is not a complete list.

1) Any cutting and welding operations using torches;
2) Spray painting operations;
3) Spraying of herbicides and pesticides;
4) Sweeper operator (mechanical) except when in a pressurized cab with windows up;
5) Rock or concrete drilling operation;
6) Concrete chipping and jack-hammering
7) Sand or abrasive blasting or grinding;
8) Fence repair when using torches on galvanized or other possible hazardous material;
9) Any operation involving lead paint;
10) Any work area that exposes our construction, maintenance, or other personnel to breathing contaminated air;
11) A work area that has the potential for excessive dust and dangerous gases and fumes;
12) Crash and rescue firefighting operations at our State-owned airports as required;
13) Any oxygen-deficient area.
CTDOT workers with the exception of Aircraft Crash and Rescue Firefighters are strictly prohibited for entering oxygen deficient atmospheres. If there is any question as to the air qualities in a specific space contact the DOHS prior to entry.

**Types of Respirators**

**Air-Purifying Respirators.** The Department utilizes half-face respirators from a variety of manufacturers for protection of its employees. When used with the proper cartridges they will provide protection against harmful dusts, mists, fumes, gases or vapors. Note that these are dual cartridge respirators and the employee will require two of each filter/cartridge. Replacement of HEPA (N, P, R) cartridges must occur when an increase in breathing resistance is encountered or the cartridge becomes soiled or damaged. Chemical cartridges should be replaced as directed by the end of service life indicator (ESLI) on the cartridge. In the event there is no ESLI on the cartridge, the supervisor shall contact DOHS to determine an appropriate cartridge replacement schedule. No cartridge other than HEPA cartridges shall be used for more than one 8-hour shift regardless of the calculated service life as contamination may occur during storage. For more specific information on application contact the DOHS.

In vehicle repair locations, the Department has established an engineered system involving vehicle exhaust hoses and source capturing units capable of removing contaminated air from the work site. At these locations it may not be necessary to wear a respirator if the engineered system is in proper working order. It is however, essential that the garage supervisor conduct monthly inspection of the engineered system. Additionally, the garage supervisor must document any deficiencies found and have them corrected.

**Training and Education**

It is the Department’s responsibility to train both the supervisor and employee/user in the use and care of the respirator. Each employee required to wear a respirator due to the job assignment shall be issued his/her own respirator. A qualified individual of the company supplying the Department with respirators shall conduct a Train the Trainer course for CTDOT DOHS personnel and selected CTDOT employees on an as needed basis. The CTDOT DOHS or the authorized trainers shall conduct the employee’s initial instruction on respirator use and limitations. This could be handled during the fit-testing session. All employees enrolled in the Respiratory Protection Program will receive subsequent respirator fit-testing and training in accordance with the applicable standards.

The general outline for training will consist of reviews of:

1) Review of CTDOT’s Respiratory Protection Program;
2) General respiratory hazards associated with the workplace;
3) Overview of OSHA 1910.134 regulations;
4) Protection against hazards;
5) IDLH atmospheres;
6) Respirator use, inspection, maintenance & storage.
Training sessions shall be documented on a Department Tailgate Talk Form and forwarded through normal channels to the CTDOT DOHS, the Training Division and any other appropriate office.

**Self-Contained Breathing Apparatus (SCBA) (Fire Service Specific)**
Self-Contained Breathing Apparatus (SCBA) is used in an atmosphere that is oxygen-deficient because the atmosphere is considered "Immediately Dangerous to Life and Health" (IDLH). SCBAs are assigned to the firefighting crash/rescue units at CTDOT owned airports. The familiarization and training of the employees utilizing SCBA's is through a coordinated effort between the Fire Chief at Bradley International Airport, the Fire Captain at Brainard Airport and the Safety Division. Such training includes but is not limited to use, inspection and proper care of the SCBA units by the employees using them. The mechanical inspection of the SCBA units is to be consistent with OSHA regulations.

Training sessions for SCBA shall be conducted by the individual Fire Service units and documented on internal training forms. Copies shall be maintained on-site with copies forwarded to the CTDOT DOHS and any other appropriate office.

**Air Quality Standards**
Compressed air used for respiration must be of high purity. Breathable air must meet at least the requirement for Grade D breathable air specified in applicable Compressed Gas Association Commodity Specification G-7.1-1973. Breathable air cylinders must be clearly marked and will be utilized by only qualified, trained employees. The handling and storage of these gas cylinders must be consistent with good safety practices.

**Cleaning, Inspection & Storage**

**Cleaning.** Respirators shall be cleaned and disinfected regularly according to the manufacturer's instructions and CTDOT DOHS. Each employee will clean his/her own respirator after each day's use or more often if necessary. The employee will remove each filter and wash all parts of the respirator in a disinfectant solution supplied by the Department. The respirator parts shall then be thoroughly rinsed and left to air dry in a clean location.

**Inspection.** During the cleaning process the employee shall inspect his/her respirator for cracks, cuts or any worn areas. The condition of the face piece, headband, valves and filters must be checked for wear. Rubber or elastomeric parts must be inspected for deterioration. Any imperfections must be brought to the attention of the supervisor immediately and corrected. Additionally, once a month the supervisor shall inspect each employee's respirator for imperfections. This inspection and the results shall be documented on the Respirator Inspection Form and kept on file for 3 years at the facility location to be made available upon request or during the annual review of the program by the CTDOT DOHS.

**Storage.** Each employee is responsible for the proper handling and care of his/her respirator. The respirator shall be stored in a clean and sanitary location. A clean, sealable plastic bag is acceptable for storage. The respirator should not be subjected to extreme temperature changes. It should not be stored at the bottom of a locker or under truck seats or where heavy items placed could be placed on top of it which could cause damage.
Worksite Evaluation
It is required that Supervisors evaluate all worksites and operations before work actually begins. Appropriate surveillance of the worksite conditions, which may include air monitoring, by the supervisor or lead person should be ongoing so that unexpected hazards are minimized. If there is any question contact the DOHS prior to exposure.

Medical Evaluations
Before being assigned a task that requires the use of a respirator, the employee must be evaluated through the respirator evaluation process. This process is administered by the CTDOT Medical Clinic and the UCONN Health Center. The purpose is to determine each participant is physically capable of safely wearing a respirator.

Employees who are required to wear a respirator shall complete a detailed health questionnaire as required and the attending Physician will determine the need for a more detailed physical examination.

The Physician may alter the examination guidelines if medically necessary for the protection of the employee. Once the Physician arrives at a medical decision on an employee, the Department will make every effort to adjust the employee's duties to comply with that decision.

Annual Review, Fit-testing, & Recordkeeping

Annual Medical Review.
- An annual report will be sent by the CTDOT DOHS to each unit Supervisor listing the names of those currently respirator cleared for that unit;
- The Supervisor will determine if the listed employees are still required to wear a respirator or not;
- If not they will be crossed off the list
- If required new ones will be added
- The Supervisor will give each employee a copy of the medical form indicated on the list which, the employee must complete and return to the Supervisor;
- The Supervisor will forward the updated list and completed update forms to a pre-established collection site for pickup by the DOHS;

- The Medical Office will review the documentation and generate a list of employees cleared for fit-testing;
- The DOHS will coordinate the fit-testing and training component with the units to insure compliance;
- Once evaluated and medically cleared, fit-testing and training will be coordinated through DOHS.

Note: An employee may request to complete a new Medical Questionnaire at any time. Each new participant will be required to complete a medical questionnaire.

Fit-testing. Employees who are required to wear a negative pressure respirator will be fit tested once they have been cleared to wear a respirator through the medical evaluation process. The fit test procedure used will be sufficient to determine that the employee is afforded the proper protection. The Department will record which type of respirator will be assigned to that
employee. The CTDOT DOHS will oversee the fit-testing of employees using procedures in accordance with manufacture’s recommendations and current OSHA standards. Additionally, the employee shall perform a negative or a positive pressure self-fit check each time he/she wears the respirator.

**Special Note**
1. It is unacceptable to wear soft contact lenses when wearing a full-face respirator.
2. It is Departmental policy that during fitting and while performing tasks requiring respiratory protection, the employee will be free of any facial hair that would result in an incomplete protective seal between the face and the respirator. This means that full beards or full mustaches are prohibited for employees who are required to wear the respirators.

**Recordkeeping.**

**Medical Records.** All medical records related to the Respiratory Protection Program shall be maintained by the DOHS medical office. Medical records shall be maintained and retained in accordance with OSHA regulations, CTDOT policy, and UCHC policy.

**Fit-test Records.** A copy of the employee fit-testing form will be retained at the CTDOT medical office until a new fit-test has been performed. The original copy of the fit-test form shall be retained at the employee’s work location for a period of 3 years.

**Inspection Records.** Documentation of the supervisor’s monthly respirator inspection shall be retained at the employee’s work location for a period of 3 years. Fit-testing records and inspection records at the employee’s work location shall be maintained in the same file. These files must be easily accessible and available for review upon OSHA’s or CTDOHS’s request.

**Program Evaluation**
The CTDOT DOHS shall conduct a complete review of this program at least annually to determine the continued effectiveness of the respiratory program. As required, the CTDOT Respiratory Program shall be modified to reflect the recommended or required changes.
Appendix A

Supervisor Training
Respiratory Protection Program
Supervisor Training

Objectives
To explain the types of respiratory workplace hazards, potential results of exposure, and to give an overview of respiratory protection programs. The result should be greater understanding of the need for respiratory protection and greater cooperation with medical evaluations.

Suggested Materials to have on Hand
Samples of respirators used by workers
Copies of medical evaluation questionnaire
Copies of facility's written respiratory protection program

Introduction/Overview
Respirator hazards are present in many jobs and workplaces. There's a risk of serious illness or even death from inhaling dangerous airborne substances or working where the air contains too little oxygen.

OSHA has always tried to protect against airborne hazards by requiring respirator use when ventilation and other controls can't make the air safe to breathe. A respirator is simply an enclosure that covers the nose and mouth or sometimes the entire face and head. There are two types of respirators. Air-purifying respirators remove contaminants from the air. Atmosphere-supplying respirators provide clean breathing air from an uncontaminated source and are usually used to prevent more hazardous exposures.

Since OSHA's rules were written in 1971, respiratory technology and our knowledge of what's needed for protection have improved. Therefore, 1998 brought new OSHA rules designed to give workers in a wide variety of industries the benefit of these advances.

This subject is so important that one meeting can't cover it all. Today we'll review when and why we need respirators and how we determine who can use them. In other meetings, we'll look more carefully at how to select, use, fit test, and maintain respirators.

General Hazards
Hundreds of people die on the job every year, and thousands more are injured or become seriously ill because of respirator use failures. These workers either didn't use respirators, or didn't choose or use them correctly. This is a mistake you can't afford to make. Some respiratory hazards can overcome you in an instant or create permanent physical damage before you realize it.

It's no surprise that OSHA gives respiratory protection so much attention. The safety agency estimates that its respirator regulation could save as many as 900 lives and prevent more than 4,000 injuries and illnesses every year.
Respirators protect you from two major hazard categories. One is atmospheres that are dangerous because you could inhale hazardous materials such as:

- Particulates and/or dusts (e.g., silica, asbestos, cotton dust);
- Toxic vapors and gases (e.g., carbon monoxide, formaldehyde);
- Radioactive contaminants;
- Biological agents (e.g., mold spores).

Inhaling contaminated air can cause a wide variety of ailments. While the illnesses depend on the nature and quantity of the contaminants, exposure may cause such acute health problems as nausea, headaches, and throat irritation. Inhaling some substances can cause serious chronic illnesses or even death.

Among the many serious health risks associated with inhaling dangerous substances are:

- Respiratory and lung illnesses;
- Heart problems;
- Disabling diseases such as asbestosis or silicosis;
- Cancers;
- Radiation exposure, possibly leading to leukemia and other cancers, sterility, and/or shortened life span;
- Viral and bacterial infections from inhaling bio aerosols Oxygen Deficiency.

Respirators also protect against the health hazards of breathing air that contains less than 19.5 percent oxygen—air that is oxygen-deficient. Breathing in oxygen-deficient air affects you immediately, and the effects grow more serious as the oxygen levels drop.

Inhaling air that contains 16 percent to 19.5 percent oxygen can increase breathing rates and heartbeat and impair thinking and coordination. In many jobs, even a short loss of concentration or coordination can cause a serious accident:

- When the air has 12 percent to 16 percent oxygen, breathing and heart rates accelerate. It impairs attention, thinking, and coordination even while you're not moving or exerting yourself;
- Air that's 10 percent to 14 percent oxygen causes faulty judgment and exhaustion with even minimum exertion;
- When air's oxygen content hits 6 percent to 10 percent, expect to experience nausea, vomiting, lethargic movements and perhaps unconsciousness;
- When air contains less than 6 percent oxygen, you'll go into convulsions. Then breathing and heartbeat stop. This happens very fast. Even if you get immediate medical attention and survive, there's a strong risk of permanent damage.

If you think these hazards are unlikely, think again. Oxygen deficiency can occur when there are high concentrations of gases in the air—for instance, after an explosion or chemical reaction. A complete flashover in an enclosed area from a high-temperature electrical fire or arc welding accident can temporarily eliminate the area's oxygen.

In fact, the respiratory regulation specifically deals with protection for firefighters, whose jobs put them at risk of asphyxiation and severe lung damage.
Serious oxygen deficiency is one type of hazard that's termed immediately dangerous to life or health (IDLH).

IDLH describes 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.

Respiratory hazards may also arise from using respirators. You're at risk if you use a respirator that's not designed to protect against the hazards in your work area. You also can't get protection from a damaged respirator or from one that doesn't fit properly. Some people find that wearing a respirator while engaged in heavy physical work and/or wearing heavy personal protective equipment also puts excess strain on the body.

**OSHA Regulations**

OSHA's respiratory protection regulation (29 CFR 1910.134) covers approximately 5 million workers who work in general industry, shipyards, marine terminals, long shoring and construction. It requires employers to provide respirators when "necessary to protect the health of the employee." The regulation also requires employers to set up and follow a written respiratory protection program that identifies and protects against the individual workplace's specific respiratory hazards. Employers must also provide employees with medical evaluation, respirator fit-testing, and training in respiratory hazards and protections.

OSHA's revised respiratory standard also becomes the standard for the many other OSHA regulations that require respirator use. This includes rules for activities with respiratory hazards, such as fire brigades (1910.156), welding, cutting, and brazing (1910.252), and pulp, paper, and paperboard mills (1910.261).

The new rules also replace the respiratory protection sections of standards for many specific substances that are hazardous when inhaled. Among the substances covered are:

- Asbestos (1910.1001)
- Vinyl chloride (1910.1017)
- Lead (1910.1025)
- Cadmium (1910.1027)
- Benzene (1910.1028)
- Methylene chloride (1910.1052)

All these revisions are, of course, designed to use today's knowledge and technology to protect employee health.

**Identifying Hazards**

The respiratory protection regulation says its purpose is to control illnesses caused by breathing contaminated air. When the air is contaminated, employers first try to protect employees with engineering controls. They enclose operations, install ventilation, or take similar steps to prevent contaminants from getting into the atmosphere. Only when such controls can't make the air safe to breathe do employers provide respirators.
The first step, however, is to determine whether there's a risk to employee health. OSHA requires employers to:

Evaluate the workplace's respiratory hazards;
Identify relevant workplace and user factors that could affect respiratory hazards and health;
Develop a written respiratory program and appoint a qualified administrator;
Select and provide respirators appropriate for the hazards and certified by NIOSH).

Employers use various methods to identify hazards. Often, they use monitoring devices to identify and measure the specific hazards in a specific individual's breathing zone. Sometimes they use random samplings for the entire area.

Whatever the method, they have to identify:

What the contaminant is;
What form it's in (dust, gas, etc.);
The likelihood of employee exposure;
The circumstances that could lead to employee exposure.

Air also has to be tested to check its oxygen levels. If it's found to be oxygen-deficient, or if an employer can't reasonably identify or estimate employee exposures, the atmosphere is usually considered IDLH—immediately dangerous to life and health—with appropriate precautions needed for employee protection.

**Protection against Hazards**
The OSHA regulation includes special efforts to make sure employees and respirators are well-matched to provide protection. In fact, it makes it clear that not every employee can safely wear a respirator. The regulation notes that "using a respiratory may place a physiological burden on employees that varies with the type of respirator worn, the job and workplace conditions in which the respirator is used, and the medical status of the employee."

Thus, OSHA begins the respirator selection process with medical evaluations to assure that every employee assigned to wear a respirator is able to do so.

**Medical Evaluation**
The medical evaluation plays a vital health role and deserves your full cooperation. It's free, it's confidential, and it's performed at a time and place convenient to you. The Department's physician or other assigned licensed health care provider either administers OSHA's questionnaire or gives an exam that covers the same ground. The health care provider is required to ask questions or perform an exam so you understand it. You also get a chance to discuss the results.

The medical evaluation is not a full physical. It covers only health issues that could affect your ability to work safely while wearing a respirator, such as:

Asthma, pneumonia, silicosis, chronic bronchitis, or other present or past lung or pulmonary problems;
Shortness of breath, coughing, wheezing, chest pain, or other possible current symptoms of lung problems;
Heart attack, high blood pressure, angina, or other present or past heart or cardiovascular problems;
Chest pain or tightness or other current or past heart problems or symptoms;
Claustrophobia;
Trouble smelling odors;
Current or recent tobacco smoking;
Current or recent medication for breathing, lung, heart, blood pressure, or seizures;
Past problems using a respirator.

Employers must give the health care providers who conduct the evaluations other information to help them determine an employee's ability to use a respirator safely. That could include:

- The type and weight of the respirator the employee will use;
- How long and how often the employee will use the respirator;
- Expected physical work effort while wearing the respirator;
- Other personal protective equipment to be used with the respirator;
- Possible workplace temperature and humidity extremes.

If a medical evaluation indicates possible problems using a respirator, the employee must have appropriate follow-up tests or exams. After an evaluation, the health care provider gives the employer and employee a written recommendation on the employee's ability to use the respirator safely.

This covers only:

- Whether the employee is medically able to use the respirator;
- Any limits on the employee's respirator use related to medical condition or conditions of workplace respirator use;
- Any need for follow-up medical evaluations.

In addition to any recommended follow-up exams, you may have later medical evaluations if you, your supervisor, your health care provider, or the respirator program administrator detects any problems that could indicate a need for re-evaluation. You would also be re-evaluated if changes in physical work effort, temperature, or other working conditions could substantially increase the hazard you face while wearing a respirator.

**CTDOT Specific Procedures**

**Medical Evaluations**
Before being assigned a task that requires the use of a respirator, the employee must be evaluated through the respirator evaluation process. This process is administered by the CTDOT Medical Clinic and the UCONN Health Center. The purpose is to determine each participant is physically capable of safely wearing a respirator.
Employees who are required to wear a respirator shall complete a detailed health questionnaire as required and the attending Physician will determine the need for a physical examination.

The physician may alter the examination guidelines if medically necessary for the protection of the employee. Once the physician arrives at a medical decision on an employee, the Department will make every effort to adjust the employee's duties to comply with that decision.

**Annual Review, Fit-testing & Recordkeeping**

Annual Review and Fit-testing Procedures
An annual report will be sent by the CTDOT DOHS to each unit Supervisor listing the names of those currently respirator cleared for that unit.
The Supervisor will determine if the listed employees are still required to wear a respirator or not.
If not they will be crossed off the list
If required new ones will be added
The Supervisor will give each employee a copy of the medical form indicated on the list which, the employee must complete and return to the Supervisor.
The Supervisor will forward the updated list and completed update forms to a pre-established collection site for pickup by the DOHS.
The Medical Office will review the documentation and generate a list of employees cleared for fit-testing.
The DOHS will coordinate the fit-testing and training component with the units to insure compliance.

Note: An employee may request to complete a new Medical Questionnaire at any time.

For new participants:
Each new participant will be required to complete a medical questionnaire.
Once evaluated and medically cleared, fit-tested and training will be coordinated through the unit.

**Safety Procedures**
You can see, then, that a lot has to happen before anyone can even wear a respirator on the job.
Employers must:

Identify the nature and extent of potential hazards in the air;
Develop a written plan to protect employees from the hazards;
Use engineering controls to reduce or eliminate the hazards;
Identify other work conditions such as temperature, physical exertion, and personal protective equipment that could affect the ability to work safely;
Provide employees with free confidential medical evaluations to identify any possible problems or limits on ability to wear a respirator without health problems.

If these steps indicate a need for respiratory protection and your ability to wear one safely, you then:
Select an acceptable respirator from choices designed to protect you from the particular hazard;
Inspect and maintain the respirator properly;
Get carefully fit tested to be sure that the respirator provides full protection;
Learn how and when to use the respirator while performing specific tasks or responding to an emergency.

Because respiratory protection is such an important and detailed topic, those protections will be covered in other safety meetings.

**Wrap-up**

Respiratory hazards can be a major threat to your health and even your life. That's why OSHA requires employers to identify those hazards and provide employees with the right kind of protection against them. That includes making sure each individual is able to wear a respirator safely before assigning that person to wear one.

We need your cooperation to protect your own health and to protect others who could be endangered if you're overcome while wearing a respirator. Work with us to reduce airborne hazards and the risks they present to us.
Appendix B

Employee/User Training
Respiratory Protection Program
Employee/User Training

Objectives
To explain how to select, use, and maintain respirators properly in order to prevent health problems from inhaling hazardous contaminants or air that's oxygen-deficient or otherwise dangerous to life and health. The result should be greater attention to selecting the correct respirator and using and maintaining it properly.

Suggested Materials to have on Hand
Selection of respirators used in the facility
Copies of respiratory protection program

Introduction/Overview
Respiratory protection is a very important part of workplace health. OSHA has always carefully regulated the use, selection, and fit of respirators. In 1998, the safety agency revised its respiratory regulation to incorporate advances in knowledge and technology.

OSHA requires a series of steps to assure respiratory protection. To help assure that those steps are fully understood, and followed, we are focusing this meeting only on the basic elements of respirator selection, use, and maintenance. Identifying a workplace's respiratory hazards, determining individuals' ability to work safely while wearing a respirator, and getting a good respirator fit are all covered in other safety meetings.

General Hazards
We wear respirators when we have to work in situations where airborne hazards can't be reduced to a safe level by ventilation, enclosing operations, and other engineering controls.

When you do need a respirator, you have to be sure it's designed to protect against the specific type and degree of airborne hazard present.

Some work situations require respirators because the air contains hazardous dusts, particles, fumes, gases, vapors, etc. Other work situations are hazardous because the air is oxygen-deficient. Oxygen deficiency is one example of an atmosphere that's considered IDLH—Immediately Dangerous to Life and Health. OSHA defines that term as meaning "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."

OSHA Regulations and Violations

The regulation requires:
A written respiratory protection plan with worksite-specific procedures
Appropriate respirators, certified by NIOSH and matched to the identified respiratory hazards in that workplace
Medical evaluation of each employee by confidential questionnaire or exam before being assigned to wear a respirator
Respirator fit-testing for each employee assigned to wear a respirator with a negative or positive pressure tight-fitting facepiece
Training employees on why and how to select, use, fit, maintain, and store respirators
Periodic evaluation of the respiratory protection program's elements to be sure they're protecting employees

The regulation specifically deals with respirators in IDLH atmospheres, including firefighting. And it replaces the rules relating to respirators in other standards that cover specific substances that are dangerous when inhaled (e.g., asbestos, lead, benzene) as well as processes related to airborne hazards (e.g., ventilation, fire brigades, and welding).

**Protection Against Hazards**
OSHA requires employers to identify the type and degree of respiratory hazards in their workplace and provide respirators designed to protect against those hazards. OSHA requires only respirators certified by NIOSH, the National Institute for Occupational Safety and Health. It also requires that employers offer enough of a selection so that all employees can find something acceptable that fits properly.

The basic types of respirators are:

Air-purifying respirators, which remove specific contaminants from the air you breathe by having the air pass through a filter, cartridge, or canister.
Atmosphere-supplying respirators, which supply the user with clean breathing air from a separate source. Self-contained breathing apparatus (SCBA) where the user carries their own air supply. And supplied-air respirators (SAR) or airline respirator where the air supply is delivered by an airline from an external source.

Atmosphere-supplying respirators provide the highest level of protection, and they're used in IDLH atmospheres, including most oxygen-deficient atmospheres.

For protection against contaminants in gas or vapor form, OSHA requires either:
An atmosphere-supplying respirator, or
An air-purifying respirator with an end-of-service-life indicator (ESLI) certified by NIOSH to protect against the particular contaminant. If no ESLI is appropriate for the specific conditions, the employer can include objective data in the written respirator program that's used to set a schedule to assure changing the cartridges or canisters before the end of their service life. The point is to avoid cartridge or canister saturation, letting contaminants through and into your respiratory system.

For protection against particulates, employers must provide:
An atmosphere-supplying respirator, or
An air-purifying respirator whose filter is NIOSH-certified as appropriate

An air-purifying respirator designed for the wrong contaminant will not protect you. Be sure your respirator is NIOSH-certified to protect you against the specific contaminant and the form (dust, gas, etc.) that's in the air. All filters, cartridges, and canisters must have legible NIOSH approval labels and color-coding.

For an IDLH atmosphere, employers must provide either:
Full facepiece pressure demand SCBA certified by NIOSH for a service life of at least 30 minutes, or
Combination full facepiece pressure demand supplied-air respirator with auxiliary self-contained air supply

Respirators provided only for escape from IDLH atmospheres have to be NIOSH-certified for escape from the type of atmosphere where they will be used. Employers have to have a written respiratory protection program that describes respiratory hazards in their workplace, what's being done to protect employees, and who's in charge. You're expected to wear a respirator when the respiratory administrator or any knowledgeable supervisor says the job demands it. Of course, you wear the respirator only after you've been medically evaluated as able to do so and properly fit tested.

OSHA says employees can also wear a respirator in situations where it's not actually required. The regulation says an employer may provide respirators at employees' request or permit employees to use their own "if the employer determines that such respirator use will not in itself create a hazard."
In those situations, OSHA requires employers to inform employees that a respirator can become a hazard if it's used improperly or not kept clean.

Therefore, if you wear a respirator when it's not required, you're responsible for making sure it is:

The proper respirator, certified by NIOSH as protecting against the contaminant to which you are exposed
Not worn in atmospheres containing other contaminants
Used, maintained, and cleaned according to manufacturer's instructions and use limits

When you do have to wear a respirator, however, it must be worn and worn correctly. You'll be carefully fit tested before you wear the respirator on the job. This is to ensure it seals contaminants out and allows you to work effectively. You must then, keep the respirator on whenever you're in an area with a hazardous atmosphere.

You may leave that respirator use area:
To wash your face and/or respirator facepiece to prevent eye or skin irritation
If you detect vapor or gas getting through, facepiece leakage, or changes in your breathing resistance. Leave the work area immediately when that happens and replace or repair the respirator before you return.
IDLH Atmosphere Requirements
Much more stringent precautions are required when there's a need to work in an IDLH atmosphere. In those situations, you have no margin for error. A mistake, or equipment that doesn't work, could leave you or a co-worker trapped and helpless.

That's why OSHA requires that a worker in an IDLH atmosphere must:
- Wear the proper respirator
- Stay in visual, voice, or signal line contact with at least one employee outside that atmosphere. That person or persons must be equipped with a positive pressure SCBA or comparable respirator, retrieval or equivalent equipment, and the training to provide effective emergency rescue. Then, if rescue is needed, this person (or persons) notifies the employer and provides necessary assistance.

Firefighting or rescuing people from fire in an IDLH atmosphere is even more dangerous.

Here, OSHA requires that:
- At least two employees must enter an IDLH area to fight a fire or perform fire rescue.
- The employees in the area must wear SCBAs and stay in constant voice or visual contact with each other.
- At least two employees equipped with SCBAs must be stationed outside the IDLH area.

**Medical Evaluation**
The medical evaluation plays a vital health role and deserves your full cooperation. It's free, it's confidential, and it's performed at a time and place convenient to you. The Departments’ physician or other assigned licensed health care provider either administers OSHA's questionnaire or gives an exam that covers the same ground. The health care provider is required to ask questions or perform an exam so you understand it. You also get a chance to discuss the results.

The medical evaluation is not a full physical. It covers only health issues that could affect your ability to work safely while wearing a respirator, such as:

- Asthma, pneumonia, silicosis, chronic bronchitis, or other present or past lung or pulmonary problems
- Shortness of breath, coughing, wheezing, chest pain, or other possible current symptoms of lung problems
- Heart attack, high blood pressure, angina, or other present or past heart or cardiovascular problems
- Chest pain or tightness or other current or past heart problems or symptoms
- Claustrophobia
- Trouble smelling odors
- Current or recent tobacco smoking
- Current or recent medication for breathing, lung, heart, blood pressure, or seizures
- Past problems using a respirator
Employers must give the health care providers who conduct the evaluations other information to help them determine an employee's ability to use a respirator safely. That could include:

- The type and weight of the respirator the employee will use
- How long and how often the employee will use the respirator
- Expected physical work effort while wearing the respirator
- Other personal protective equipment to be used with the respirator
- Possible workplace temperature and humidity extremes

If a medical evaluation indicates possible problems using a respirator, the employee must have appropriate follow-up tests or exams. After an evaluation, the health care provider gives the employer and employee a written recommendation on the employee's ability to use the respirator safely.

This covers only:

- Whether the employee is medically able to use the respirator
- Any limits on the employee's respirator use related to medical condition or conditions of workplace respirator use
- Any need for follow-up medical evaluations

In addition to any recommended follow-up exams, you may have later medical evaluations if you, your supervisor, your health care provider, or the respirator program administrator, detects any problems that could indicate a need for re-evaluation. You would also be re-evaluated if changes in physical work effort, temperature, or other working conditions could substantially increase the hazard you face while wearing a respirator.

**Safety Procedures**

These detailed precautions give an indication of how seriously OSHA treats respiratory protection. OSHA wants to make sure we take it seriously, too. To make sure you know what's required and why, the OSHA regulation requires training at least every year for employees who are required to use respirators. Training, given first before an employee wears a respirator, must be understandable.

At the end, employees should be able to show they know about:

- Why respirators are necessary and how improper fit, use, or maintenance can compromise its effectiveness
- Respirator capabilities and limitations
- Effective emergency respirator use
- How to inspect, put on, remove, use, and check seals of the respirator
- How to maintain and store the respirator
- Medical signs and symptoms that could limit or prevent effective respirator use

Training is provided at least annually, as well as whenever:

Workplace changes or respirator types available make training obsolete.
Employee knowledge or use of the respirator indicates a need for retraining.

**CTDOT Specific Medical Evaluations**
Before being assigned a task that requires the use of a respirator, the employee must be evaluated through the respirator evaluation process. This process is administered by the CTDOT Medical Clinic and the UCONN Health Center. The purpose is to determine each participant is physically capable of safely wearing a respirator.

Employees who are required to wear a respirator shall complete a detailed health questionnaire as required and the attending Physician will determine the need for a physical examination.

The physician may alter the examination guidelines if medically necessary for the protection of the employee. Once the physician arrives at a medical decision on an employee, the Department will make every effort to adjust the employee's duties to comply with that decision.

**Annual Review and Fit-testing Procedures**
An annual report will be sent by the CTDOT Division of Occupational Health & Safety to each unit Supervisor listing the names of those currently respirator cleared for that unit.
The Supervisor will determine if the listed employees are still required to wear a respirator or not.
If not they will be crossed off the list
If required new ones will be added
The Supervisor will give each employee on the list a copy of the standard Annual Respirator Update form which the employee must complete and return to the Supervisor.
The Supervisor will forward the updated list and completed update forms to a pre-established collection site for pickup by the DOHS.

The Medical Office will review the documentation and generate a list of employees cleared for fit-testing.
The DOHS will coordinate the fit-testing and training component with the units to insure compliance.

Note: An employee may request to complete a new Medical Questionnaire at any time.

For new participants:
Each new participant will be required to complete a medical questionnaire.
Once evaluated and medically cleared, fit-testing and training will be coordinated through the unit.

**Respirator Maintenance and Storage**
OSHA is also quite specific about how to maintain and store respirators. The regulation even has a required appendix on the topic. OSHA says employers must provide respirators that are clean, sanitary, and in good working order. Respirators shared by more than one person have to be cleaned and disinfected between users. Respirators used for emergencies or fit-testing also have to be cleaned and disinfected after each use.
Respirators used during routine work should be inspected before each use and during cleaning. SCBAs also have to be inspected monthly and air and oxygen cylinders maintained in a fully charged state.

A respirator inspection should cover:
- Proper functioning
- Tight connections
- Face piece, head straps, valves, connecting tube, cartridges/canisters/filters in good condition
- Pliable elastomeric parts with no deterioration

Respirators used for emergencies must be inspected at least monthly and before and after each use. A signed, dated tag or label should record the inspection and findings and any remedial action.

Emergency escape-only respirators are to be inspected before they're carried into the workplace for use. If you find a problem during any respirator inspection, don't use the respirator. Remove it from service. If it can't be repaired, it must be discarded.

OSHA also puts a lot of emphasis on careful, thorough respirator cleaning and disinfecting. To clean a respirator you take it apart and wash it in warm water with mild detergent or a cleaner recommended by the manufacturer. Then you rinse it thoroughly. If the cleaner doesn't also disinfect, place the respirator components for two minutes in a hypochlorite solution or an aqueous solution of iodine or other commercial cleaner/disinfectants.

A thorough rinse is essential. Detergent or disinfectants that dry on a facepiece could cause skin problems. Disinfectants could also corrode metal parts or cause rubber to deteriorate. After rinsing the parts, either air dry them or use a clean lint-free cloth for drying. Reassemble as necessary and test the respirator to make sure it works.

Finally, be sure you store respirators properly. OSHA states that storage placement must not deform the facepiece or exhalation valve. In addition, storage must protect respirators from "damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals." The respirators used for emergencies also have to be clearly identified as such and kept in where you have easy access to them from the work area.

**User Specific Respirator Training**
Each individual will be trained to use the specific respirator they are required to use. This training will be the determined by the manufacturer’s requirements.

**Wrap-up**
When you have to work in hazardous atmospheres, your health depends on choosing and using a respirator properly. Be sure your respirator is designed to protect against the type and form of contaminant in your work area. Check that it has all its parts and that they're in good condition. Wear the respirator when you're supposed to. Then clean, disinfect, and store it properly so that it's ready to protect you the next time you need it.
Appendix C

Medical Questionnaire
OSHA Respirator Medical Evaluation Questionnaire (Mandatory) CFR 1910.134 Appendix C

To the Employee:

Can you read? (Circle one): Yes / No

Your supervisor must allow you to answer this questionnaire during normal working hours, or at a time and place that is convenient to you. To maintain your confidentiality, your supervisor may not look at or review your answers, and you will be given specific instructions as to how to deliver or send this questionnaire to the ConnDOT Medical Office who will review it.

Last Name: _________________________ First Name: ____________________ Employee Number: ___________

Unit/Crew: _________________________ Work Location: ______________________________________________

Work Phone: ____________________________ Home Phone: __________________________________

Section 1 (Mandatory)

The following information must be provided by every employee who has been selected to use any type of respirator (please print).

1. Today’s date: ___________________

2. Your name: ________________________________ Address: __________________________________________

3. Your age (to nearest year): ________________ DOB: ______________________

4. Sex (circle one): Male / Female

5. Your height: _______ ft. _______ in.

6. Your weight: _________ lbs.

7. Your job title: ________________________________

8. The phone number where you can be reached by the health care professional who reviews this questionnaire (include the Area Code):

9. The best time to phone you at this number: ________________

10. Has your employer told you how to contact the health care professional who will review this questionnaire? (circle one) Yes / No

11. Have you worn a respirator? (circle one) Yes / No

   If “yes,” what type(s): ______________________________________
12. Check the type of respirator you will use (you can check more than one category):

- N, R, or P disposable respirator (filter-mask, non-cartridge type only)
- Half-face
- Full-face
- Powered-air purifying
- Supplied-air
- Self-contained breathing apparatus (SCBA)

13. List the common types of substances that you may be exposed to (e.g. paint, vapors, lead, dust).
____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________

14. On average, how often are you expected to use the respirator(s)? (Check all answers that apply)

- Escape only (no rescue);
- Emergency rescue only;
- Less than 5 hours per week;
- Less than 2 hours per day;
- 2 – 4 hours per day;
- Over 4 hours per day.

15. Describe your average duration and frequency of usage (e.g. one hour twice daily):
____________________________________________________________________________________________
____________________________________________________________________________________________
____________________________________________________________________________________________

16. During the period you are using the respirator(s), is your typical work effort: (check at least one)

- Light (less than 200 kcal per hour):
  If yes, how long does this period last during the average shift? ___________ hrs. ____________ mins.
  Examples of a light work effort are sitting while writing, typing, drafting, or performing light assembly work; standing while operating a drill press (1 – 3 lbs.), or controlling machines.

- Moderate (200 – 350 kcal per hour):
  If yes, how long does this period last during the average shift? ___________ hrs. ____________ mins.
  Examples of moderate work effort are transferring a moderate load (about 35 lbs.) at trunk level: walking on a level surface about 2 mph or down a 5-degree grade about 3 mph; or pushing a wheelbarrow with a heavy load (about 100 lbs.) on a level surface.

- Heavy (above 350 kcal per hour):
  If yes, how long does this period last during the average shift? ___________ hrs. ____________ mins.
  Examples of heavy work are lifting a heavy load (about 50 lbs.) from the floor to your waist or shoulder; working on a loading dock; shoveling; standing while bricklaying or chipping castings; walking up an 8-degree grade about 2 mph; climbing stairs with a heavy load (about 50 lbs.).
17. Will you be wearing protective clothing and/or equipment (other than the respirator) when you're using your respirator (e.g., F.R. clothing, chemical protective clothing, hearing protection, head protection, eye protection)? (circle one)  Yes / No  If yes, describe the protective clothing or equipment you will be using.

____________________________________________________________________________________________
____________________________________________________________________________________________

18. Will you be working under hot conditions (above 77° F.)?  (circle one)  Yes / No

19. Will you be working under humid conditions?  (circle one)  Yes / No

20. Describe the type of work that you perform while wearing a respirator including any special responsibilities that affect the safety of others such as firefighting and rescue work:

____________________________________________________________________________________________
____________________________________________________________________________________________

21. Do you use a respirator under any special environmental conditions (confined space entry, life threatening gases)? (circle one)  Yes / No  If yes, please describe:

____________________________________________________________________________________________
____________________________________________________________________________________________

22. Have you ever had difficulties tolerating a respirator in the past?  (circle one)  Yes / No  If yes, please explain:

____________________________________________________________________________________________
____________________________________________________________________________________________

* OSHA requires the administration of a medical examination to any employee who is assigned to emergency rescue operations while wearing a self-contained breathing apparatus. Are you assigned to this type of operation?  (circle one)  Yes / No

Section 2 (Mandatory)

Questions 1 through 10 below must be answered by every employee who has been selected to use any type of respirator (please circle ``yes'' or ``no'').

1. Do you currently smoke tobacco, or have you smoked tobacco in the last month?  (circle one)  Yes / No

2. Have you ever smoked tobacco?  (circle one)  Yes / No  If yes:

   Average cigarettes per day _______
   Number of years smoked _______
   Year discontinued smoking _______
3. Have you ever had any of the following conditions?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Seizures (fits);</td>
<td></td>
</tr>
<tr>
<td>b. Allergic reactions that interfere with your breathing;</td>
<td></td>
</tr>
<tr>
<td>c. Trouble smelling odors.</td>
<td></td>
</tr>
<tr>
<td>d. Diabetes (sugar disease);</td>
<td></td>
</tr>
<tr>
<td>e. Claustrophobia (fear of closed-in places);</td>
<td></td>
</tr>
</tbody>
</table>

4. Have you ever had any of the following pulmonary or lung problems?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Asbestos;</td>
<td></td>
</tr>
<tr>
<td>b. Chronic Bronchitis (ongoing symptoms);</td>
<td></td>
</tr>
<tr>
<td>c. Pneumonia;</td>
<td></td>
</tr>
<tr>
<td>d. Allergic reactions that interfere with your breathing;</td>
<td></td>
</tr>
<tr>
<td>e. Diabetes (sugar disease);</td>
<td></td>
</tr>
<tr>
<td>f. Pneumothorax (collapsed lung);</td>
<td></td>
</tr>
<tr>
<td>g. Asthma;</td>
<td></td>
</tr>
<tr>
<td>h. Emphysema;</td>
<td></td>
</tr>
<tr>
<td>i. Bronchitis (ongoing symptoms);</td>
<td></td>
</tr>
<tr>
<td>j. Chlorothorax;</td>
<td></td>
</tr>
<tr>
<td>k. Pneumonia;</td>
<td></td>
</tr>
<tr>
<td>l. Tuberculosis;</td>
<td></td>
</tr>
<tr>
<td>m. Silicosis;</td>
<td></td>
</tr>
<tr>
<td>n. Any other lung problem that you’ve been told about.</td>
<td></td>
</tr>
</tbody>
</table>

5. Do you currently have any of the following symptoms of pulmonary or lung illness?

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Shortness of breath;</td>
<td></td>
</tr>
<tr>
<td>b. Shortness of breath when walking fast on level ground or walking up a slight hill or incline;</td>
<td>Yes / No</td>
</tr>
<tr>
<td>c. Shortness of breath when walking with other people at an ordinary pace on level ground;</td>
<td>Yes / No</td>
</tr>
<tr>
<td>d. Have to stop for breath when walking at your own pace on level ground;</td>
<td>Yes / No</td>
</tr>
<tr>
<td>e. Shortness of breath when washing or dressing yourself;</td>
<td></td>
</tr>
<tr>
<td>f. Shortness of breath that interferes with your job;</td>
<td></td>
</tr>
<tr>
<td>g. Coughing that produces phlegm (thick sputum);</td>
<td></td>
</tr>
<tr>
<td>h. Coughing that wakes you early in the morning;</td>
<td></td>
</tr>
<tr>
<td>i. Coughing that occurs mostly when you are lying down;</td>
<td></td>
</tr>
<tr>
<td>j. Coughing up blood in the last month;</td>
<td></td>
</tr>
<tr>
<td>k. Wheezing;</td>
<td></td>
</tr>
<tr>
<td>l. Wheezing that interferes with your job;</td>
<td></td>
</tr>
<tr>
<td>m. Chest pain when you breathe deeply;</td>
<td></td>
</tr>
<tr>
<td>n. Any other symptoms that you think may be related to lung problems.</td>
<td></td>
</tr>
</tbody>
</table>

6. Have you ever had any of the following cardiovascular or heart problems?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Heart attack;</td>
<td></td>
</tr>
<tr>
<td>b. Stroke;</td>
<td></td>
</tr>
<tr>
<td>c. Angina;</td>
<td></td>
</tr>
<tr>
<td>d. Heart failure;</td>
<td></td>
</tr>
<tr>
<td>e. Swelling in your legs or feet (not caused by walking);</td>
<td></td>
</tr>
<tr>
<td>f. Heart arrhythmia (heart beating irregularly);</td>
<td></td>
</tr>
<tr>
<td>g. High blood pressure;</td>
<td></td>
</tr>
<tr>
<td>h. Any other heart problem that you’ve been told about.</td>
<td></td>
</tr>
</tbody>
</table>

7. Have you ever had any of the following cardiovascular or heart symptoms?

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Yes / No</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Frequent pain or tightness in your chest;</td>
<td></td>
</tr>
<tr>
<td>b. Pain or tightness in your chest during physical activity;</td>
<td></td>
</tr>
<tr>
<td>c. Pain or tightness in your chest that interferes with your job;</td>
<td></td>
</tr>
<tr>
<td>d. In the past two years, have you noticed your heart skipping or missing a beat;</td>
<td>Yes / No</td>
</tr>
<tr>
<td>e. Heartburn or indigestion that is not related to eating;</td>
<td></td>
</tr>
<tr>
<td>f. Any other symptoms that you think may be related to heart or circulation problems.</td>
<td>Yes / No</td>
</tr>
</tbody>
</table>
8. Do you currently take medication for any of the following problems?

| a. Breathing or lung problems; | Yes / No | b. Heart trouble; | Yes / No |
| c. High blood pressure; | Yes / No | d. Seizures (fits); | Yes / No |

9. If you’ve used a respirator, have you ever had any of the following problems? (If you’ve never used a respirator, check the following box and go to question 9)

| a. Eye irritation; | Yes / No | b. Skin allergies or rashes; | Yes / No |
| c. Anxiety; | Yes / No | d. General weakness or fatigue; | Yes / No |
| e. Any other problem that interferes with your use of a respirator. | Yes / No |

10. Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? (circle one) Yes / No

**Questions 11 to 16 below must be answered by every employee who has been selected to use either a full-face piece respirator or a self-contained breathing apparatus (SCBA). For employees who have been selected to use other types of respirators, answering these questions is voluntary.**

11. Have you ever lost vision in either eye (temporarily or permanently): (circle one) Yes / No

12. Do you currently have any of the following vision problems?

| a. Wear contact lenses; | Yes / No | b. Wear glasses; | Yes / No |
| c. Color blind; | Yes / No | d. Any other eye or vision problem. | Yes / No |

13. Have you ever had an injury to your ears, including a broken ear drum: (circle one) Yes / No

14. Do you currently have any of the following hearing problems?

| a. Difficulty hearing; | Yes / No | b. Wear a hearing aid; | Yes / No |
| c. Any other hearing or ear problem. | Yes / No |

15. Have you ever had a back injury: (circle one) Yes / No

16. Do you currently have any of the following musculoskeletal problems?

| a. Weakness in any of your arms, hands, legs, or feet; | Yes / No | b. Back pain; | Yes / No |
| c. Difficulty fully moving your arms and legs; | Yes / No | d. Pain or stiffness when you lean forward or backward at the waist; | Yes / No |
| e. Difficulty fully moving your head up or down; | Yes / No | f. Difficulty fully moving your head side to side; | Yes / No |
| g. Difficulty bending at your knees; | Yes / No | h. Difficulty squatting to the ground; | Yes / No |
| i. Climbing a flight of stairs or a ladder carrying more than 25 lbs; | Yes / No | j. Any other muscle or skeletal problem that interferes with using a respirator. | Yes / No |

(Continued on other side)
Participant Instructions

- When completed, please return the questionnaire to your supervisor in a sealed envelope;
- Once the questionnaire has been received, it will be reviewed by the University of Connecticut Health Center (UCHC) and determination will be made as to the need for additional medical evaluation.
- If additional medical monitoring is required, specific instructions will be provided by the CTDOT Medical Office.

Any questions may be referred to:

Patricia Keltonic, RN
CTDOT Medical Office
2800 Berlin Turnpike
Newington, CT 06111
(860) 594-2060

_I believe the information I have provided is true to the best of my knowledge. I understand providing false information may subject me to the risk of serious injury or death while using a respirator._

_________________________________________  ________________________
Signature                                      Date
First Name: ___________________  Last Name: ___________________________

Phone Number: ____________________

Unit: __________   Crew: _________   Date: ______________________________

When answering this form, do NOT include any personal medical information. If you indicate that there has been a change in your health or medical condition the CTDOT Medical Office will contact you directly to discuss the matter confidentially.

Please be as clear and specific as possible when answering questions 2&3.

When completed and signed return the form to your Supervisor who will forward it to the CTDOT Medical Office.

1. During the past year have there been any significant changes in your health or in any medical condition?

2. During the past year have there been any changes in the type of respirators that you are required use during work?

3. During the past year have there been any changes in the type of jobs or tasks you do, including the length of time that you are required to use a respirator during work?

4. Is there any other reason that you find you are having difficulty using a respirator or might not be able to use one when required?

Employee Signature: _______________________________  Date:  ______________

CTDOT Medical Office Comments:
Appendix E

Fit-Testing Record
Connecticut Department of Transportation  
Division of Occupational Health and Safety  
Respirator Fit-Testing Record  
Employee Information

| Date: |  
| Employee Name: |  
| Employee Number: |  
| Employee Job Location: |  

### Respirator Information
Check the appropriate box indicating the respirator selected:

- [ ] Half-face air-purifying
- [ ] PSAP
- [ ] Other: __________

Cartridge Type Used for Testing: **P-100 HEPA**

### Conditions which Could Affect Respirator Fit

- [ ] Clean Shaven
- [ ] 1-2 day Beard Growth (Do not test if under seal)
- [ ] 2+ day Beard Growth (Do not test if under seal)
- [ ] Mustache (Do not test if under seal)
- [ ] Facial Scars
- [ ] Dentures Absent
- [ ] Glasses
- [ ] None

Comments: ___________________________________________________________________

### Respirator Fit Checks

| Negative Pressure | [ ] Pass | [ ] Fail | [ ] Not Complete |
| Positive Pressure | [ ] Pass | [ ] Fail | [ ] Not Complete |

### Fit Testing

- [ ] Quantitative  
  Fit Factor: __________

- [ ] Qualitative

- [ ] Irritant Smoke  
  [ ] Pass  
  [ ] Fail

Comments: ___________________________________________________________________

### Employee Acknowledgement of Test Results

| Employee’s Signature: | X |
| Test Conducted By: |  

The above respirator fit test was performed on and by the person listed above. The results indicate the performance of the listed respiratory protective device, as fitted on the employee named on this record under controlled conditions. Fit testing as performed ensures the ability of the respiratory device to provide protection to the individual tested. The Test Conductor makes no guarantee that this or an identical respiratory protective device will provide adequate protection other than those present when this test was performed. Improper use, maintenance or application of this or any other respiratory protective device will reduce or eliminate protection.
Appendix F

Supervisor’s Checklist
**Supervisor’s Respiratory Protection Program Checklist**

**Review Participant List**
When you receive the list from the Division of Occupational Health and Safety, evaluate it based upon current and future operational needs. Who currently wears a respirator and who do you need to have that ability in the future. This will determine which employees must be included in the upcoming testing cycle.

- Make adjustments and complete the list, sign off on it and send it your Section Manager within one week of receipt.
- Any employee on the list who has not been issued a respirator must be issued one prior to testing. If they don’t have one, order it now. Questions on ordering may be referred to the District Training Coordinator or the Division of Occupational Health and Safety.

**Distribute Participant Forms**
The participant list will also provide the appropriate form to be filled out by the participant. Any new participants will be expected to fill out the Medical Questionnaire. The Supervisor should supply the participant with the following:

- A Medical Questionnaire or Annual Update form as indicated by the participant list. (One copy of each form is provided with the participant list and they are also available in electronic format through the Safety Blog on the Intranet and the Safety Folder in Outlook;
- A Participant’s Checklist.

It is very important to take the following steps:

- Hand deliver each form to the Participants;
- Instruct them to complete the appropriate form thoroughly;
- Instruct them to seal it in an envelope and return it to you ASAP;
- Schedule a time for a special Tailgate Talk with all the participants to review the Participant’s Checklist with them;
- Return the completed forms to your Section Manager for collection by the Division of Occupational Health and Safety within two weeks of receiving the list.

**Conduct Tailgate Talk**
The Tailgate Talk to review the Participant’s Checklist should be held approximately one week prior to the testing date. During the talk be sure to review each item on the checklist and answer any questions. If you do not know the answer to a question, contact the Division of Occupational Health and Safety for clarification. At the Tailgate Talk take the following steps:

- Review each item on the Participant’s Checklist;
Have each Participant sign the checklist indicating that they have read and understand the content;

- Make copies for the unit file and a copy for the Participant if they wish to have one;
- Send the originals to your Section Managers office for collection by the Division of Occupational Health and Safety.

**Preparation for Test Day**

There are often questions or problems on the day of the fit testing. The following are guidelines to assist the supervisor in making this process as smooth as possible.

The Respiratory Protection Program and the accompanying medical evaluation process are a very complex, disciplined and expensive undertaking. It is vital that all involved cooperate to the highest degree possible. Participants are expected to be at the appointed place and time when required. There are only two excused absents:

1. Employee is out of work due to illness
2. Employee has the express prior authorization of the Section Manager or District Director

All other non-authorized absences will require that a fact-finding be held to determine why the Participant was not in attendance when required and who authorized it. Tardiness will be handled in the same manner as absences. If the participant arrives late for their fit test and training, it will be considered an absence.

No Participant is to be sent to the test site without being properly prepared or without the proper equipment. This is the Supervisor’s as well as the Participant’s responsibility. Insure that each Participant is ready on the day of the test. On the day of the test be sure that the following is in place before they leave the facility:

- Participants are to be **clean-shaven** with no facial hair between the skin and the mask seal;
- Participants are to have with them their issued respirator and appropriate filter cartridges (P100 HEPA filter);
- Participants are to be allowed enough travel time to arrive at the testing site at least 15 minutes prior to their scheduled time.
Appendix G

Participant’s Checklist
Participant’s Respiratory Protection Program Checklist

Medical Qualification
When you receive the questionnaire or annual update from the Division of Occupational Health and Safety, it must be filled out as completely and accurately as possible. The questionnaire is used to determine your fitness for wearing a respirator. Incorrect or missing information could seriously impact your health while you are wearing the respirator.

The following actions occur after you submit your medical forms:

- The Department’s Registered Nurse will review your questionnaire for completeness and if needed, contact you for clarification or additional information;
- The Department’s Physician will review the questionnaire and if needed, will contact you for clarification or additional medical evaluation.

Note: Please make sure you have indicated the phone number you wish to serve as your contact number.

The following are tips to help you complete your questionnaire accurately:

- If you do not know what type of mask you will be using, what types of duties you will be performing, and the duration of usage, please ask your supervisor;
- If you answer “yes” to a medical health question, please indicate next to it how long you have experienced the problem (i.e. since 2009, past 4 years, had 10 years ago, etc…);
- If you have never worn a respirator before, please check N/A on question 9
- Do not indicate you use SCBA or perform rescue unless you perform those operations for CTDOT.

Fit-Testing and Training
You are expected to be at the appointed place and time when required. There are only two excused absences:

1. You are out of work due to illness;
2. You have the express prior authorization of the Section Manager or District Director.

Note: All other non-authorized absences will require that a fact-finding be held to determine why you were not in attendance when required and who authorized it. Tardiness will be handled in the same manner as absences. If you arrive late for your fit-test and training, it will be considered an absence.
The day of the fit-test:

- You are to be **clean-shaven** with no facial hair between the skin and the mask seal;
- You are to have your issued respirator (clean and functional) and two filter cartridges (P100 HEPA);
- You should arrive at the testing and training site at least 15 minutes prior to your scheduled time.

**Note**: Any violation of these requirements will result in a fact-finding to determine why you were not properly prepared for fit-testing and training.

Please pay close attention to detail during your respiratory protection training. The protection your respirator provides you is only as good as the knowledge you retain and the habits you acquire. Proper selection, use, cleaning, and maintenance is essential to the effectiveness of any personal protective equipment.