1.0 Policy

Employees will be protected from the adverse effects of airborne contaminants or a lack of oxygen. Respiratory protection shall only be used when engineering controls are not feasible or while these engineering controls are being instituted.

2.0 Purpose

Establish a program for the appropriate and effective use of respiratory protection equipment.

3.0 Scope

Applies to all Sunbelt Controls work sites where respirators are required.

4.0 Definitions

Airline Respirator (see **Supplied-Air Respirator**)

Class A Respirator – an airline system – positive pressure demand system.

Class B Respirator – a Self Contained Breathing Apparatus (SCBA) – positive pressure, demand air system.

Class C Respirator – includes all half mask and full face negative pressure respirator.

Class D Respirator – an escape respirator only

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

End-of-service-life Indicator (ELSI) – a system that warns the respirator user of the approach of the end of adequate respiratory protection, for example, that the sorbent is approaching saturation or is no longer effective.

Fit Factor – a qualitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

Fit Test – the use of a protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual (see Qualitative Fit Testing and Quantitative Fit Testing).

Immediately Dangerous to Life or Health (IDLH) – an atmosphere that poses an immediate threat to like, would cause irreversible adverse health effects, or would impair an individual's ability to escape from a dangerous atmosphere.

- IDLH situations dictate the requirement for SCBA or SAR systems with escape canister. A stand-by person with self-contained breathing apparatus shall be available for emergency rescue
- Communication systems must be tested
- Rescue plans must be in place prior to entry
- Safety manager must be notified prior to any pre-planned entry into an IDLH atmosphere.

Negative Pressure Respirator – a respirator which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Oxygen Deficient – an atmosphere with an oxygen content below 19.5% by volume

Positive Pressure Respirator – a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air purifying element outside the respirator

Qualitative Fit Testing – a pass / fail test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

Quantitative Fit Testing – an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Self Contained Breathing Apparatus (SCBA) – an atmosphere-supplying respirator for which the breathing of air sources is designed to be carried by the user.

Supplied-air Respirator (SAR) or Airline Respirator – an atmosphere-supplying respirator for which the breathing air source is not designed to be carried by the user

5.0 Requirements

5.1 General

Respirators, equipment, training and medical evaluation costs will be borne by the company.

Employees shall not be allowed to enter an area requiring the use of a respirator without meeting all of the requirements of this Policy.

Medical evaluations shall be required of the Class A, B and C respirator users. Parameters of the medical evaluation are determined by a physician or other licensed health care professional (PLHCP) and required regulations.

Respirators not in use shall be maintained and stored by the respiratory protection maintenance and storage person.

5.2 Respirator Selection

The type of exposure (routine, non-routine, emergency) and expected airborne type and concentration level shall be considered when making a respirator selection. The Safety Manager shall identify the type of respirators to be evaluated for employee selection. Employees shall be given a choice of style and size from this selection.

All air purifying respirators shall be NIOSH approved for the types and levels of contaminants they are to protect against. All SCBA's shall be NIOSH approved with pressure demanded-regulators for the types and levels of contaminants they are to protect against.

5.3 Respirator Assignment

Supervisors shall be responsible for enforcing regular respirator use. Respirators shall be issued by the Safety Department for routine and non-routine work to employees after medical evaluations, training and fit testing.

A list of authorized users by respirator type shall be maintained by the Safety Department (reference Appendix 23-B).

5.4 Training

Training shall be conducted when respirators are first issued or when any employee is assigned to a new area where the use of respirator(s) is required. The supervisor is responsible for notifying the Safety Department before new employees enter applicable work areas.

Employees shall be instructed to change cartridges/canisters when breakthrough occurs or after each use. Employees shall be instructed to change filters when increased resistance occurs or after each use.

Training and fit testing shall be required initially (prior to use) and annually thereafter for all respirator users.

Retraining shall occur before the next use of a respirator if:

- An employee is observed to demonstrate a lack of knowledge in the use of a respirator
- There are changes in the workplace rendering any prior training obsolete
- There are changes in the respiratory equipment

Employee training shall include:

- An opportunity to handle the respirator
- Proper fit testing
- Test of face/face piece seal
- A long familiarizing period of wear in normal air
- Explanation of how a particular type of respirator was selected, and its limitations
- Why a respirator is necessary
- How to clean a respirator
- How to maintain, clean and change cartridges
- Must leave contaminated area to perform
- How to use a respirator in emergency situations when the respirator malfunctions
- How to inspect, put on and remove a respirator
- How to recognize medical signs and symptoms
- General requirements of the OSHA standard (OSHA 29 CFR 1910.134(k))

During fit testing provide or allow:

- Demonstration in putting on and removing a respirator
- Practice in wearing respirator
- Adjusting parts of equipment
- How to determine the fit with positive and negative fit checks

5.5 Medical Evaluation & Fit Testing

Prior to fit testing, employees shall have a medical evaluation performed by a physician or other licensed health care professional (PLHCP) prior to being assigned to use a face fitting respirator. A medical questionnaire (reference Appendix 23-A) shall be completed by the PLHCP. The employee shall submit the completed medical questionnaire to the Safety Department.

This must be:

- During normal working hours
- Confidential
- Convenient
- Understandable
- Results to be discussed with employee

Employees shall be fit tested prior to respirator utilization with their work activities. Any changes in physical attributes affecting their ability to wear/use the respirator shall be immediately reported to the Safety Department as to determine the need for further medical evaluation and fit testing.

Qualitative fit testing shall be done using irritant smoke and a chamber when respirators are first issued and during refresher training.

Quantitative fit testing, if necessary, shall be provided by designated source established by the Safety Department.

Tight fitting face piece users shall not have facial hair that interferes with the face seal.

5.6 Maintenance and Storage

Employees are responsible for cleaning and the storage of their assigned respirators however individual part replacement and sanitizing shall be arranged by the employee with the respirator maintenance person.

For unassigned respirators, the competent person is responsible for sanitation and re-issuance. Respirator cleaning shall be done using an acceptable sanitizing kit or detergent and hot water as identified in an addendum to this policy.

Cleaning shall be done after use for unassigned respirators. The Competent Person shall collect all used respirators.

SCBA and air-line respirators shall be inspected monthly by the competent person. The date of inspection and initials shall be noted on the respirator tag. A log for respirator inspections shall be maintained. A separate log shall be kept for each air-line and SCBA unit (reference Appendix 23-C).

Air purifying respirators assigned to employees shall be kept in their carrying pouch, or airtight bag in a clean environment.

Cabinets may be designated for storage of escape respirators. Employees should check with their supervisor for specific information in this regard.

5.7 Program Surveillance

Program effectiveness shall be evaluated through regular inspections of each area/situation where respirators are used and stored. The evaluation is to include affected employee interviews regarding all aspects of this program. The Safety Department shall be responsible for these evaluations.

Work areas where emergency respirator use may be required shall be reviewed by the Safety Department to assure that adequate personnel are available at the work site on a 24-hour basis to complete or assist in completing required air monitoring.

The procedures to be taken during an emergency are included in the Emergency Preparedness Plan (reference Section Fifteen [15] – Emergency Preparedness – of this manual).

5.8 Recordkeeping

For the duration of work activities, records shall be kept at the work site by the Safety Manager or designee.

The following records shall be filed together and shall include:

- Written program and appendices
- The numbers and types of respirators in use
- The Employee Respirator Use Records
- Medical Evaluation sheet
- Program surveillance and inspection reports
- Respirator inspection logs and other maintenance information
- Respirator training records

5.9 Respirator Details

5.9.1 Maintenance

Only certain types of maintenance may be conducted by Sunbelt Controls personnel. The manufacturer's guide should indicate the types of maintenance to be conducted by factory-authorized representatives. In some cases, it may be possible to send an employee through the maintenance certification schools offered by the major manufacturers to learn more sophisticated maintenance procedures (reference Appendix 23-B).

5.9.2 SCBA Basics

On all pressurized systems, only grade "D" air or better can be utilized. Never use pure oxygen in any system.

Open-circuit systems with pressure-demand regulators are recommended for use in both oxygen-deficient and IDLH atmospheres.

SCBA are approved as systems. Any interchange of parts between units of different manufacturers or systems shall void the NIOSH/MSHA approval.

A face piece designed for use with a demand regulator cannot be used with a pressure-demand regulator.

All SCBA shall have an alarm that goes off when 20-25% of the air is left.

Any SCBA with less than a 15-minute air supply may be used for emergency escape only.

5.9.3 Air Line Respirator Basics

Air may be supplied from an air cylinder or a compressor (oxygen shall not be used). Cylinders are to be tested and maintained according to DOT regulations and need to be properly labeled.

As related to compressors:

- Breathing air types need no carbon monoxide (CO) alarm
- Oil-lubricated types need either a high temperature or CO alarms or both. If only a high temperature alarm is used, the air shall be tested weekly for CO
- Alarms are necessary to indicate compressor failure and overheating
- Between the compressor and the receiver, air shall pass through a particulate filter followed by a bed of activated charcoal and moisture absorber. The filters and absorbents shall be inspected regularly and changed as necessary
- The intake of the compressor should be protected by locating it away from sources of contamination such as auto exhaust or the exhaust of engines, which run the compressor

Air-line couplings shall not be the same size or types as other gas system outlets.

In an immediately dangerous to life or health (IDLH) atmosphere:

- A wearer shall also have an auxiliary self-contained supply of respirable air for escape

Air-line respirators need a flow control valve to govern air flow. Air flow depends on the length of the hose and the mask and is specific for each respirator type, make and approval. Never go outside the manufacturer's recommendations.

Up to 300 feet of air line may be used depending on the system.

Air-line respirators are approved as systems. Any interchange of parts between units of different manufacturers or systems shall void the NIOSH/MSHA approval.

5.10 Respirator Protection Poster

Once the written program is completed, the program coordinator shall post in every work area where respirators are regularly used, as feasible.

5.11 Employee Respirator Use Record

Each assigned respirator requires an Employee Respirator Use Record (reference Appendix 23-B). All portions of the form should be filled in and discussed with the employee prior to signing.

If training does not include all areas at a given time, the areas that have been covered should be marked so that the other topics may be covered later.

5.12 Employee Voluntary Use Activity

Employees who voluntarily utilize respirators in work sites where exposure does not warrant use, or who uses their own respirator shall be provided with information on this activity covered in Appendix 23-D (Voluntary Respirator Usage Form) and document their knowledge and understanding of the information covered therein.

6.0 Responsibilities

6.1 Safety Department

Overall accountability for respiratory protection program with direct program implementation and maintenance assigned to the assigned competent person.

- Reviews effectiveness of the program on a regular basis with the competent person.
- Interacts with location management regarding approval and/or changes in the respiratory protection program.
- Ensure fit testing and training are properly documented.
- Periodically audit respirator permitted areas to determine the effectiveness of the program.
- Remove unapproved respirators from service.
- Maintain a list of current approved respirators by NIOSH that are used in the Respiratory Program.

6.2 Department Managers

- Ensure compliance with this Policy within their department.
- Inform the Safety Department of change in supervisor positions.
- Ensure correct respirators are available to department employees.

6.3 Superintendents/Supervisors

Worksite Assessment: Ensure that a worksite assessment is conducted and that the Safety Department is notified if respiratory protection maybe required.

- Ensure that employee training, fit testing and medical evaluation requirements are met.
- Ensure proper respirators are available.
- Maintain surveillance of work area conditions and levels of employee exposure or stress.
- Ensure that a tight fitting face piece respirator is not worn when conditions prevent a good face seal, e.g. facial hair that interferes with the face seal or temple pieces on glasses.
- Notify the Risk Manager of any personnel or process changes.
- Refer all persons requiring certification–in their area–to the Safety Department for training prior to being assigned work requiring the use of respirators.

6.4 Assigned Competent Person

- Coordinate the overall implementation and maintenance of the Respiratory Protection Program.
- Identify and evaluate operations that contain certain airborne contaminants.
- Ensure proper selection of respirators.

- Ensure proper documentation of training and fit testing is maintained.
- Assist in training of respirator users.
- Provide medical personnel with requested work-related information to assist in the examination.
- Provide medical information on environmental conditions that the respirator shall be worn in.
- Evaluates the effectiveness of the respirator program with the Safety Department.

6.5 Employee

- Ensure proper training is obtained before donning a respirator.
- Ensure that a tight fitting face piece seal is available when required to wear a respirator.
- Check the respirator fit after each donning as instructed.
- Go immediately to an area having respirable air if the respirator fails to provide proper protection.
- Report any respirator malfunction to the person responsible for maintenance.

6.6 Physician or other Licensed Health Care Professionals (PLHCP)

- Medical evaluations shall be conducted by a PLHCP. They shall determine if the employee is medically fit to use a respirator.
- They shall provide medical evaluation that shall include a medical history and spirometric test for Class A, B and C respirator users.
- The frequency of follow-up medical evaluations shall occur defined by the health care professional during the initial evaluation, based on expose.

6.7 Designated Maintenance Personnel

- Ensure all respirators are maintained and stored properly.
- Ensure respirator face piece and parts cleaned with water detergent and sanitized.
- Ensure all parts are inspected and maintained as like new.
- Ensure completely dried respirators are assembled and stored properly to protect against chemicals and environmental elements.
- Ensure nonfunctional SCBA's are removed from service, overhauled, tested and documented as being functional before being placed into service.
- Ensure all air supply systems provide grade D breathable air to the respirator users face piece.

7.0 References

OSHA 29 CFR 1910.134
OSHA 29 CFR 1910.1000
ANSI Z88.2 1969
ANSI Z88.2 1980
ANSI Z88.6 1984
NIOSH Guide to Industrial Respiratory Protection (Published 1987)