PEAK NDT SOLUTIONS	Respiratory Protection Program				
Control number:	HSE-P-25	Revision date:	8/29/2024	Rev #:	0
Approved by:	Derrick Landry	Revised by:	Madison Myers	MOC#:	N/A

PURPOSE

The purpose of this program is to help reduce employee exposure to occupational air contaminants and oxygen deficient environments. The primary objective is to prevent excessive exposure to these contaminants.

1.0 GENERAL

A. When engineering control measures are not feasible or during emergency situations with high exposure, Peak NDT Solutions will provide at no cost to the individual employee; respirators, training and medical evaluations which are suited for the protection level required for applicable use and which provides a comfortable face-to-face piece seal.

B. Peak NDT Solutions HSE Manager will be deemed the "Program Administrator" and shall be certified in the complexity of respiratory hazards and be able to competently conduct annual evaluations. Employee participation in this program is considered a condition of continued employment with Peak NDT Solutions, and is so implemented for their health and protection. Employee input is appreciated and welcomed, as improvements to the existing program can be made by virtue of comments and suggestions.

2.0 RESPIRATORY HAZARD ASSESSMENTS

A. Peak NDT Solutions recognizes that most respiratory exposure hazards are readily detectable by use of a properly calibrated direct-reading instrument. Some respiratory hazards, however, can become a resultant of the actual work activity. With this in mind, employees are required to assess and evaluate all areas immediately adjacent to the assigned work area prior to work startup for potential respirator use:

1. When it is known or suspected that work activities will create a harmful breathing atmosphere;

2. When it is known or suspected that other adjacent work activities will create a harmful breathing atmosphere; and

3. Whenever in doubt as to whether the activities of other contract employees will create a respiratory hazard.

3.0 HAZARDOUS INFORMATION SOURCE

A. Peak NDT Solutions will rely on that data and other information provided by NIOSH (National Institute of Occupational Safety and Health), OSHA (Occupational Safety and Health Administration), testing laboratories or other recognized sources when making the determination that a contaminant will or will not present a hazard to its employees. Peak NDT Solutions will consider the following a serious respiratory hazard:

1. Oxygen Deficient Atmosphere: When breathable atmosphere has oxygen content of less than 19.5% by volume.

2. Presence of Vapors: In concentration levels at or above that established by the appropriate Threshold Limit Value (TLV) for the particular substance. Of concern to Company employees, is the presence of vapors originating from flammable remnants of oils, fuel and other petroleum-based products in tanks and other containment vessels.

3. Presence of Dust: Created by work activities involving grinding, chipping, scaling, or other abrasive-oriented methodology. When dust concentration levels are significant enough to become visible in the breathable air, then respiratory protection should be considered.

4. Presence of Fumes: Resulting from thermal decomposition associated with welding and other activities where heat is applied to metal or other substances. When on customer property, employees will receive information regarding site-specific hazards and the areas in which they exist. However, employees may become exposed to respiratory hazards created by fumes when working down wind of welding operations and/or while in areas of poor natural ventilation.

5. Presence of Mist: Resulting from the use of industrial paints, solvents, and any liquid under pressure being enacted upon by a solid structure. Mist may be created by process operations on Company and/or customer property. Employees must be careful to protect the skin when using substances that are irritants or when working in the vicinity of where others are using them.

4.0 RESPIRATORY HAZARD CHARACTERISTICS

A. Peak NDT Solutions, as part of its evaluation, will consider respiratory hazards as any accumulation of toxic or harmful substances, either existing or created by a specific work activity. In addition, a condition or substance which:

1. Has the potential to render an individual ill, either for a short period of time (acute) or over a longer period of time (chronic).

2. Has the potential to render an individual unconscious or leave the individual incapacitated, (e.g., an IDLH atmosphere - Immediately Dangerous to Life and Health).

3. Have the characteristics, which classify it as a hydrocarbon, carcinogen or other "oxygen scavenger".

4. Has known or suspected levels of hydrogen sulfide gas present which exceed the permissible exposure limits (10 ppm NIOSH/20 ppm OSHA).

5.0 WORKPLACE & USER FACTORS

A. Peak NDT Solutions shall identify respiratory hazards, select and provide respirators based on those hazards affecting performance or when engineering control measures are not feasible. Respirators shall be "NIOSH" certified and will be used in compliance with the conditions of the exposure hazards. Peak NDT Solutions shall estimate exposures and contaminant information. If this is not done, then exposures must be addressed as Immediately Dangerous to Life & Health (IDLH). Employees are required to maintain respirators in usable and sanitary condition at all times during use.

B. Peak NDT Solutions has designated the below areas as those which require the routine use of respiratory protection as part of normal work activities:

1. When working in areas where detectable levels of hydrogen sulfide gas is present and/or the potential for a release is imminent, Supplied Air Respirator (SAR) connected to remote breathing source which is monitored continuously by another employee or other authorized person. In addition, 5-minute escape bottles are to be worn whenever SARs are required.

2. During an emergency release while on the job site and/or during job walk inspections. Self-Contained Breathing Apparatus (SCBA) shall feature a warning alarm when air supply reaches a level that is at least 25% less than capacity.

3. When sweeping, chipping, or involved in other activities where dust and nuisance airborne particulates are present. Dust Mask shall be worn to protect employees from respiratory hazards associated with the inhalation of harmful particulate.

C. When respirators are selected for use in IDLH atmospheres, Peak NDT Solutions will ensure that it affords the employee the maximum degree of protection provided, and will be either:

1. A full face-piece pressure demand SCBA certified by NIOSH, a minimum service life of thirty minutes, or

2. A combination full face-piece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply (5-minute escape bottle).

6.0 MEDICAL EVALUATION

A. Peak NDT Solutions will require individuals who will use a respirator to pass medical certification and pulmonary test with a Company physician, prior to fit testing in order to determine his/her fitness to use a respirator under pre-determined work conditions.

B. Records of medical evaluations required by the policy must be retained and made available in accordance with 29 CFR 1910.1020. All medical records and respiratory program are maintained in the HSE Manager's office.

7.0 MEDICAL EVALUATION PROCEDURES

A. The evaluation shall be confidential, during normal working hours, convenient and understandable. The employee shall be given the chance to discuss results with the physician or licensed health care professional (PLHCP).

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

8.0 ADMINISTRATION OF THE MEDICAL QUESTIONNAIRE & EXAMINATIONS

A. The medical questionnaire and examinations will be administered confidentially during the employee's normal working hours or at a time and place convenient to the employee. The medical questionnaire will be administered in a manner that ensures that the employee understands its' contents.

B. Peak NDT Solutions will provide an opportunity for the employee to discuss the examination results with the PLHCP.

9.0 FIT TESTING

A. Peak NDT Solutions requires that all employees who will wear a respirator, Supplied Air Respirator or Self-Contained Breathing Apparatus be Qualitative fit tested annually with the same make, model, style, and size of respirator that will be used while working. The purpose of such testing will be to familiarize the wearer with what it takes to achieve a proper face piece seal and comfortable fit and wearing a respirator under working conditions.

B. Peak NDT Solutions will ensure that employees who use a tight-fitting face piece respirator pass an appropriate qualitative fit test (QLFT) or quantitative fit test (QNFT) as stated in the standard.

10.0 FIT TESTING REQUIREMENTS

A. Peak NDT Solutions and/or PLHCP shall make visual observations and inform the employee of issues that could affect a proper respirator fit. These include, but are not limited to:

- Facial Hair;
- Facial Scarring;
- Dental Changes;
- Cosmetic surgery;
- Prescription Glasses

B. Peak NDT Solutions shall establish a record of the qualitative and/or quantitative fit tests administered to an employee including:

- The name or identification of the employee tested;
- Type of fit test performed;
- Specific make, model, style, and size of respirator tested;
- Date of test; and
- The pass/fail results for QLFT's

11.0 NEGATIVE PRESSURE FIT TEST

Peak NDT Solutions will perform a qualitative fit test on all negative pressure air-purifying respirators.

12.0 POSITIVE PRESSURE FIT TEST

Fit testing of tight-fitting atmosphere-supplying respirators and tight-fitting powered air-purifying respirators will be accomplished by performing qualitative fit testing in the negative pressure mode, regardless of the mode of operation that is used for respiratory protection.

13.0 MODIFICATION

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

14.0 USE OF RESPIRATORS

A. Employees should never remove respirators while in a hazardous environment. If a problem with the mask is suspected, then the employee shall exit the contaminated area immediately, with mask in place, and perform an inspection of the respirator outside of the contaminated area.

B. Only employees who have had medical clearance and respiratory protection training will be allowed to work in environments where respirators are required.

15.0 RESPIRATOR EFFECTIVENESS

A. The program administrator shall address appropriate surveillance regarding work area conditions and degree of employee exposure or stress. When there is a change in work area conditions or degree of employee exposure or stress that may affect respirator effectiveness, Peak NDT Solutions will re-evaluate the continued effectiveness of the respirator.

B. Peak NDT Solutions will ensure that all employees leave the respirator use area:

1. To wash their faces and respirator face pieces as necessary to prevent eye or skin irritation associated with respirator use; or

2. If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the face-piece; or

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

16.0 PROCEDURES FOR IDLH ATMOSPHERES

A. Whenever Peak NDT Solutions is unable to identify or reasonably estimate employee exposure to contaminants, whether on Company or customer property, it shall consider the area to be IDLH until further assessment with a direct reading atmospheric test instrument is performed.

B. For all IDLH atmospheres, Peak NDT Solutions will ensure that:

1. At least one employee is located outside the IDLH atmosphere;

2. Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) outside the IDLH atmosphere;

3. The employee(s) and/or the designated representative located outside the IDLH atmosphere are trained and equipped to provide effective emergency rescue;

4. Employee(s) and/or the designated representative located outside the IDLH atmospheres are equipped with:

- Pressure demand or other positive pressure SCBAs, or a pressure demand or other positive pressure supplied-air respirator with auxiliary SCBA; and either
- Appropriate retrieval equipment for removing the employee(s) who enter these hazardous atmospheres where retrieval equipment would contribute to the rescue of the employee(s) and would not increase the overall risk resulting from entry.

17.0 BREATHING AIR QUALITY & USE LIMITATIONS

A. Peak NDT Solutions will ensure that compressed air & compressed oxygen when used for respiration accords with the following specification:

1. Compressed and liquid oxygen shall meet the US Pharmacopoeia requirements for medical or breathing oxygen; and

2. Compressed breathing air shall meet at least the requirements for Type I-Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

   - Oxygen content of 19.5% to 23.5%;
   - Hydrocarbon (condensed) content of 10 ppm or less;
   - Carbon monoxide (CO) content of 10 ppm or less;
   - Carbon dioxide content of 1,000 ppm or less; and
   - Lack of noticeable odor.

3. Peak NDT Solutions will ensure that compressors used to supply breathing air to respirators are:

   - Located in a "clean" atmosphere;
   - Have suitable in-line air-purifying sorbent beds and filters to further ensure breathing air quality.
   - Equipped with a Carbon monoxide monitor in place & set to alarm at 10 PPM;
   - Equipped with fittings that are incompatible with outlets for non-breathable worksite air or other gas systems, and
   - Have a tag containing the most recent change date and the signature of the person authorized by Peak NDT Solutions to perform the change. The tag shall be maintained at the compressor.

18.0 CARTRIDGE REPLACEMENT

"End of Service Life" for cartridges shall be recognized whenever an employee smells a vapor or gas breakthrough or experiences changes in breathing resistance.

19.0 RESPIRATOR INSPECTION

A. Respirators will be inspected as follows:

1. All respirators used in routine situations shall be inspected before each use and during cleaning;

2. All respirators maintained for use in emergency situations shall be inspected at least monthly and in accordance with the manufacturer's recommendations, and shall be checked for proper function before and after each use; and

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

B. A check of respirator function, tightness of connections, and the condition of the various parts including, but not limited to;

- The face-piece;
- Head straps;
- Valves;
- Connecting tube; and
- Cartridge or filters

20.0 CLEANING & DISINFECTING RESPIRATORS

A. Peak NDT Solutions will ensure that Respirators are maintained in a clean and sanitary manner using procedures recommended by the manufacturer.

B. Cleaning and disinfecting procedures, which are the responsibility of the wearer, are as follows:

1. Remove filters, and cartridges. Disassemble face-piece by removing speaking diaphragms, demand and pressure-demand valve assemblies, hoses, or any components recommended by the manufacturer. Discard or repair any defective parts.

2. Wash components in warm water with a mild detergent or with a cleaner recommended by the manufacturer. A stiff bristle (not wire) brush may be used to facilitate the removal of dirt.

3. Rinse components thoroughly in clean, warm, preferably running water. Drain.

4. Components should be hand-dried with a clean lint-free cloth or air-dried in non-contaminated area.

5. Re-assemble face-piece, replacing filters, cartridges, and canisters where necessary.

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

21.0 RESPIRATOR STORAGE

A. Peak NDT Solutions will ensure that respirators used by employees are stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals. They shall be packed or stored to prevent deformation of the face-piece and exhalation valve.

B. In addition to the requirements listed above, emergency respirators shall be:

1. Kept accessible to the work area;

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

3. Stored in accordance with applicable manufacturer instructions.

22.0 PROGRAM EVALUATION

A. Peak NDT Solutions shall conduct annual evaluations of the workplace as necessary to ensure that the provisions of the current written program are being effectively implemented and that it continues to be effective.

B. Peak NDT Solutions shall regularly consult employees required to use respirators to assess the employees' views on program effectiveness and to identify any problems. Any problems that are identified during this assessment shall be corrected. Factors to be assessed include, but are not limited to:

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

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

3. Proper respirator uses under the workplace conditions the employee encounters; and

4. Proper respirator maintenance.

23.0 HYDROGEN SULFIDE (H2S)

1.Hydrogen sulfide (H_2S) is a toxic and flammable gas with a distinct smell of rotten eggs. It occurs naturally and is also produced by human activities. Here are some locations where H_2S may be found in natural sources, Industrial and man-made sources and even residential sources.

2. Hydrogen sulfide (H_2S) characteristics include:

- Color: Colorless gas.
- Odor: Smells like rotten eggs at low concentrations, but high concentrations can numb the sense of smell (olfactory fatigue).
- Density: Heavier than air (1.19 times the density of air), causing it to accumulate in low-lying areas.
- Boiling Point: −60.2°C (−76.4°F).
- Melting Point: −85.5°C (−122°F).
- Solubility: Soluble in water, forming a weak acidic solution (hydrosulfuric acid).
- Flammability: Highly flammable and can form explosive mixtures with air (flammability range: 4.3% to 46%).
- Combustion: Burns to produce sulfur dioxide (SO_2) and water.
- Reactivity: Reacts with metals, forming metal sulfides, and corrodes equipment. Reacts with oxidizers.
- Acidity: H_2S acts as a weak acid in water, dissociating into hydrogen ions and sulfide ions.

3. Exposure to hydrogen sulfide (H_2S) can have a range of health effects depending on the concentration and duration of exposure. As a toxic gas, H_2S primarily affects the respiratory system, but it can also impact the nervous system and other organs.

4. In the event of an unexpected hydrogen sulfide (H_2S) release, it's essential to follow specific safety procedures to minimize the risk to human health and life, as well as to control the situation.

24.0 EMPLOYEE TRAINING

Peak NDT Solutions will provide initial training and retraining annually to its employees who use a respirator, which is comprehensive, understandable, and performed on an annual basis, and more often if necessary. Prior to using a respirator, Peak NDT Solutions will ensure that each employee understands the general requirements of this program and can demonstrate knowledge of at least the following:

A. Why the respirator is necessary and how improper fit, usage, maintenance or storage can compromise the protective effect of the respirator;

B. What the limitations and capabilities of the respirator are;

C. How to use the respirator effectively in emergency situations, including situations in which the respirator malfunctions;

D. How to inspect, put on and remove, use and check the seals of the respirator; and

E. How to recognize medical signs and symptoms that may limit or prevent the effective use of respirators.

F. Proper training on evacuation procedures.

REVISION INFORMATION

This is applicable to changes made to the current version of the preceding document.

Revision Number	Description