Respiratory Protection Standard

Table of Contents

Revision History

Rev	Date	Section	Paragraph	Summary of Change	Authorized by
01	3/22/2023	NA	NA	Initial Release	CCR 693

1.0 Purpose

It is the purpose of the Respiratory Protection standard to reduce *employee exposure* to occupational dusts, fogs, fumes, mists, radionuclides, smokes, sprays, gases, biological agents and vapors. This shall be accomplished as far as feasible by accepted engineering control measures. When such controls are not feasible, or while they are being implemented, appropriate respiratory protection shall be used in accordance with this standard. In these situations, a Respiratory Protection standard that includes training, fit testing and medical evaluations is provided.

2.0 Scope

This standard applies to all workers, contractors, users, vendors, and visitors who may be exposed to respiratory hazards requiring the use of respiratory protection as a feasible control method. While the South Dakota Science and Technology Authority (SDSTA) respiratory protection standard is administered to SDSTA employees only, all exposed users and contractors are expected to be covered by a similar program where respiratory protection use is required.

3.0 Definitions

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

Assigned protection factor (APF) – The workplace level of respiratory protection that a respirator or class of respirators is expected to provide to program members when the employer implements a continuing, effective respiratory protection standard.

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

Canister or cartridge – A container with a filter, sorbent or catalyst, or combination of these items, which removes specific contaminations from the air passed through the container.

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

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 (ESLI) – 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.

Escape-only respirator – A respirator intended to be used only for emergency exit.

Filter– A component used in respirators to remove solid or liquid aerosols from the inspired air.

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

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

Fit test – The use of a protocol to qualitative or quantitatively evaluate the fit of a respirator on an individual (see also Qualitative fit test QLFT and Quantitative fit test QNFT).

Helmet – A rigid respiratory inlet covering that also provides head protection against impact and penetration.

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

Hood – A respiratory inlet covering that completely covers the head and neck and may also cover portions of the shoulders and torso.

Immediately dangerous to life and health (IDLH) – 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. All oxygen-deficient atmospheres (less than 19.5% O_2 by volume) shall be considered IDLH.

Loose-fitting facepiece – A respiratory inlet covering that is designed to form a partial seal with the face.

Negative pressure respirator (tight fitting) – A respirator in which the air pressure inside the facepiece is negative during inhalation with respect to the ambient air pressure outside the respirator.

Occupational Exposure Limit (OEL) – An upper limit on the acceptable concentration of a hazardous substance in workplace air for a particular material or class of materials. It is typically set by a consensus standard organization of experts in order to protect occupational safety and health.

Oxygen deficient atmosphere – An atmosphere with oxygen content below 19.5% by volume.

Physician or other licensed health care professional (PLHCP) – An individual whose legally permitted scope of practice (i.e., license, registration, or certification) allows him or her to independently provide, or be delegated the responsibility to provide, some or all of the health care services required by paragraph (e) 29 CFR 1910.134.

Positive pressure respirator – A respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

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

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

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

Quantitative fit test (QNFT) – An assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

Respiratory inlet covering – That portion of the respirator that forms the protective barrier between the respirator user's respiratory tract and an air-purifying device or breathing air source, or both. It may be a facepiece, helmet, hood, suit, or a mouthpiece respirator with nose clamp.

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

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

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

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

User seal check – An action conducted by the respirator user to determine if the respirator is properly seated to the face.

4.0 Responsibilities

4.1. Laboratory Director

- **4.1.1.** Ensure accountability of the requirements of this standard with direct reports.
- **4.1.2.** Follow all requirements within this standard.

4.2. Department Directors

- **4.2.1.** Ensure that all direct reports follow all requirements within this standard.
- **4.2.2.** Follow all requirements within this standard.
- **4.2.3.** Review proposed processes involving respiratory hazards with the Environment, Safety and Health (ESH) Department before installing new or moving existing equipment.
- **4.2.4.** Ensure areas where substances hazardous to health of employees are used have the proper warning signs displayed, in consultation with the ESH department.

4.3. Engineering Director

- **4.3.1.** Ensure that all direct reports follow all requirements within this standard.
- **4.3.2.** Follow all requirements within this standard.
- **4.3.3.** Work in conjunction with various departments to ensure engineering controls are meeting minimum performance standards and effectively preventing personnel over-exposure to respiratory hazards.
- **4.3.4.** Choose less-hazardous design options whenever possible, in consultation with the ESH department.

4.4. Environment, Safety and Health Director

- **4.4.1.** Appoint a respiratory protection standard administrator to act on any and all matters relating to the operation and administration of the respiratory protection standard.
- **4.4.2.** Ensure that all direct reports follow all requirements within this standard.
- **4.4.3.** Follow all requirements within this standard.
- **4.4.4.** Update the respiratory protection standard as needed.
- **4.4.5.** Develop respiratory protection training.
- **4.4.6.** Work with appropriate staff to identify respiratory hazards, ensure proper testing & training is conducted, and establish appropriate controls.
- **4.4.7.** Identify appropriate medical monitoring providers for any necessary medical exams.
- **4.4.8.** Ensure that any respirators selected for use are of suitable condition and cleanliness.

4.5. Industrial Health (IH) Representative

- **4.5.1.** Perform or oversee air sampling.
- **4.5.2.** Follow all requirements within this standard.
- **4.5.3.** Notify supervisors and personnel of monitoring results.
- **4.5.4.** Provide concurrence that added controls are sufficient to reduce exposure below Occupational Exposure Limits (OELs).
- **4.5.5.** Recommend controls to potential respiratory hazards.
- **4.5.6.** Recommend warning signs where appropriate.
- **4.5.7.** Provide updated respiratory hazard information for site-specific training.
- **4.5.8.** Review plans for new operations and significant changes to ongoing operations that may create respiratory hazards.

4.6. Respirator Users

- **4.6.1.** Provide information regarding 3rd party respiratory protection program participation to the applicable Project Manager.
- **4.6.2.** Report suspected exposures to supervisors, project managers, and/or to the ESH Department.
- **4.6.3.** Follow all requirements within this standard.

4.7. Project Managers

- **4.7.1.** Review proposed processes involving respiratory hazards with the ESH Department before installing new or moving existing equipment.
- **4.7.2.** Ensure that contractors/researchers follow all requirements within this standard.
- **4.7.3.** Follow all requirements within this standard.
- **4.7.4.** Work in conjunction with various departments and the involved contractor(s) to ensure engineering controls are meeting minimum performance standards and effectively preventing personnel over-exposure to respiratory hazards.
- **4.7.5.** Report deficient engineering controls to the proper authority for repairs.
- **4.7.6.** Follow up on recommendations provided by the ESH department staff.
- **4.7.7.** Ensure areas where respiratory hazards are found have the proper warning signs displayed, in consultation with the ESH department.
- **4.7.8.** Choose less-hazardous design options whenever possible, in consultation with the ESH department.
- **4.7.9.** Include exposure assessment for respiratory hazards during the development and annual review of JHAs.

4.8. Supervisors

- **4.8.1.** Ensure that all direct reports follow all requirements within this standard.
- **4.8.2.** Follow all requirements within this standard.
- **4.8.3.** Work in conjunction with various departments to ensure engineering controls are meeting minimum performance standards and effectively preventing personnel over-exposure to respiratory hazards.
- **4.8.4.** Report deficient engineering controls to the proper authority for repairs.
- **4.8.5.** Follow up on recommendations provided by the ESH department staff.
- **4.8.6.** Ensure areas where respiratory hazards are found have the proper warning signs displayed, in consultation with the ESH department.
- **4.8.7.** Include qualitative exposure assessment of respiratory hazards during the development and annual review of JHA/SOPs.

4.9. Occupational Health Nurse

- **4.9.1.** Review the Baseline Questionnaire for Respirator Users.
- **4.9.2.** Refer the individual to a suitable medical expert, if additional medical evaluation is needed.

4.9.3. Assess vital signs and lung sounds.
4.9.4. Assist with fit testing.
4.9.5. Complete documentation of assessments, fit tests and ensure all documentation is kept confidential as a medical file.
4.9.6. Review Medical Clearance Forms or medical evaluations received.

4.10. Workers

4.10.1. Follow all requirements within this standard.

4.11. Non-SDSTA Personnel

4.11.1. It is the responsibility of every employer to adhere to the requirements of OSHA 1910.134(c). SURF will be available to provide guidance and assistance to affected personnel as needed for compliance with the elements of this standard.

5.0 Instructions

5.1. Work Area Evaluations

5.1.1. The employer will evaluate respiratory hazard(s) in the workplace, identify relevant workplace and user factors, and base respirator selection on these factors. Exposure evaluations will be performed initially and on a periodic basis to assess the presence of respiratory hazards and to aid in proper respirator selection. In order to determine exposure level, exposure evaluations will be determined by:

- air samples of the workplace representative for the work shift;
- exposure assessment based on analogous processes; or
- judgement based on professional expertise.

5.1.2. Personal sampling equipment may be used in accordance with accepted industrial hygiene practice or standards to sample each work area. Results of these samples will pinpoint areas where respiratory protection is required.
5.1.3. The exposure assessment will be performed prior to commencing any routine or non-routine task requiring respiratory protection. Periodically thereafter as required by changing conditions, regulatory substance-specific standards or every 12 months, a review of the exposure assessment will be made to determine if respiratory protection continues to be required. If respiratory protection is still necessary, the previously chosen respirators will be reviewed to assure that they still provide adequate protection.
5.1.4. Records of all exposure assessments will be maintained by the ESH Department.

5.2. Respirator Selection

5.2.1. Sanford Underground Research Facility (SURF) will select only respirators that are certified by the National Institute for Occupational Safety and Health (NIOSH) which must be used in compliance with the conditions of its certification. The 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. The respirator program administrator will make a respirator available immediately to each employee who is placed as a new hire or a transferee to a job that requires respiratory protection. Replacement respirators/cartridges and filters will be made available as required. Where exposure cannot be identified or reasonably estimated, the atmosphere shall be considered immediately dangerous to life or health (IDLH).
5.2.2. Selection of all respirators will conform to the Occupational Safety and Health Administration (OSHA) Assigned Protection Factors (APF) Table (see Table 1: Assigned

Protection Factors) when sampling data are available upon respirator selection or becomes available while the task is being performed.

Type of respirator1,2	Quarter mask	Half mask	Full facepiece	*Helmet/ hood*	*Loose-fitting facepiece*
1. Air-Purifying Respirator	5	310	50	.....	.....
2. *Powered Air-Purifying Respirator* (*PAPR*)	.....	50	1,000	425/1,000	25
3. *Supplied-Air Respirator* (*SAR*) or *Airline Respirator* • Demand mode • Continuous flow mode • Pressure-demand or another positive-pressure mode	....	10 50 50	50 1,000 1,000	..... . 425/1,000	..... 25 .....
4. *Self-Contained Breathing Apparatus* (*SCBA*) • Demand mode • Pressure-demand or other positive-pressure mode (e.g., open/closed circuit)	....	10	50 10,000	50 10,000	....

Table 1 -- *Assigned Protection Factors*[5]

- Employers may select respirators assigned for use in higher workplace concentrations of a hazardous substance for use at lower concentrations of that substance, or when required respirator use is independent of concentration.
- The assigned protection factors in Table 1 are only effective when the employer implements a continuing, effective respirator program as required by this section (29 CFR 1910.134), including training, fit testing, maintenance, and use requirements.
- This APF category includes filtering facepieces, and half masks with elastomeric facepieces.
- The employer must have evidence provided by the respirator manufacturer that testing of these respirators demonstrates performance at a level of protection of 1,000 or greater to receive an APF of 1,000. This level of performance can best be demonstrated by performing a WPF or SWPF study or equivalent testing. Absent such testing, all other PAPRs and SARs with helmets/hoods are to be treated as loose-fitting facepiece respirators and receive an APF of 25.
- These APFs do not apply to respirators used solely for escape. For escape respirators used in association with specific substances covered by 29 CFR 1910 subpart Z, employers must refer to the appropriate substance-specific standards in that subpart. Escape respirators for other IDLH atmospheres are specified by 29 CFR 1910.134 (d)(2)(ii).

5.3. Respirators for IDLH atmospheres

5.3.1. Approved respirators**:**

- Full facepiece pressure demand self-contained breathing apparatus (SCBA) certified by NIOSH for a minimum service life of thirty minutes, or
- Combination full facepiece pressure demand supplied-air respirator (SAR) with auxiliary self-contained air supply.

5.3.2. SURF shall ensure that compressed air, compressed oxygen, liquid air, and liquid oxygen used for respirator usage (with the exception of the compressed air in the Refuge Chamber) comply with the following specifications:

- Compressed and liquid oxygen shall meet the United States Pharmacopoeia requirements for medical or breathing oxygen; and
- Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:
  - Oxygen content (v/v) of 19.5-23.5%;
  - Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
  - Carbon monoxide (CO) content of 10 parts per million (ppm) or less;
  - Carbon dioxide (CO2) content of 1,000 ppm or less; and
  - Lack of noticeable odor.
- Only the respirator manufacturer's NIOSH-approved breathing-gas containers, marked and maintained in accordance with the Quality Assurance provisions of the NIOSH approval for the SCBA as issued in accordance with the NIOSH respirator-certification standard at 42 CFR part 84 will be used.
- Cylinders used to supply breathing air to respirators must meet the following requirements: o Cylinders are tested and maintained as prescribed in the Shipping Container Specification Regulations of the Department of Transportation (49 CFR part 180);
  - Cylinders of purchased breathing air have a certificate of analysis from the supplier that the breathing air meets the requirements for Grade D breathing air; and
  - The moisture content in the cylinder does not exceed a dew point of -50 degrees Fahrenheit (-45.6 degrees Celsius) at 1 atmosphere pressure.

5.4. Respirators for non-IDLH atmospheres

5.4.1. For protection against vapors and gases, the employer shall provide:

- An atmosphere-supplying respirator, or
- An air-purifying respirator, provided that: i. Respirator is equipped with an end-of-service-life indicator (ESLI) certified by NIOSH (with a legible label) for the contaminants, or
  - If there is no ESLI appropriate for conditions of employer’s workplace, the employer implements a change schedule for canisters and cartridges that will ensure that they are changed before the end of their service life and describes in the respirator program the information and data relied upon and basis for the change schedule and reliance on the data.

5.4.2. For protection against particulates, the employer shall provide:

- Atmosphere-supplying respirator; or
- An air-purifying respirator equipped with HEPA filters certified by NIOSH (with a legible label) or with filters certified for particulates under 42 CFR Part 84; or

- An air-purifying respirator equipped with any filter certified for particulates by NIOSH (with a legible label) for contaminants consisting primarily of particulates with mass median aerodynamic diameters of at least 2 micrometers.

5.5. Escape-Only Respirators

5.5.1. Escape-only respirators are required to be within 25 feet (ft) proximity of any person who enters the underground. Types of escape-only respirators available at SURF include the MSA W65 self-rescuer, the Ocenco EBA 6.5, and the Drager Oxy K self-rescuer. Underground personnel are to be trained on the inspection and use of each type of respirator used per MSHA 30 CFR 57.15030: Provision and maintenance of self-rescue devices. A self-rescuer that produces its own oxygen must be used as an escape-only respirator when oxygen deficient atmospheres (such as proximity to cryogenic equipment) could be present. The ESH Department will serve as resource for proper inspection, use, and maintenance of escape-only respirators. Escape-only respirators do not require a medical evaluation.

5.6. Medical Evaluation

5.6.1. Each employee who is being considered for inclusion in the Respiratory Protection Standard will participate in a medical evaluation. A determination will be made initially upon employment or change into a job classification requiring respiratory protection and every 24-months thereafter. Additional medical evaluations are required under certain circumstances, e.g.:

- Employee reports medical signs or symptoms related to an inability to use respirator;
- Physician or other licensed health care professional (PLHCP), program administrator, or supervisor recommends reevaluation;
- Information from the respirator standard, including observations made during fit testing and program evaluation, indicates a need; or
- Change occurs in workplace conditions that may substantially increase the physiological burden on an employee.

5.6.2. The employee will fill out the ESH-(4000-F)-73404 Medical Questionnaire which will be reviewed by the PLHCP or undergo an initial medical examination that obtains the same information as the medical questionnaire. A follow-up medical examination will be provided for an employee who gives a positive response to any questions 1 through 7 in Section 2, Part A of the Medical Questionnaire or whose initial medical examination demonstrates the need for a follow-up medical examination. The follow-up medical examination will include any medical tests, consultations or diagnostic procedures that the PLHCP deems necessary to make a final determination.

5.6.3. 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 questionnaire will be returned to the PLHCP after it has been completed. The employee may discuss the questionnaire and examination results with the PLHCP.

5.6.4. The purpose of the questionnaire and the initial and follow-up examinations is to determine that the employee is physically able to perform their work while wearing respiratory protective equipment. If the *PLHCP* denies approval, the employee will not be able to participate in the Respiratory Protection standard.

5.6.5. Copies of the medical evaluation and questionnaire will be kept in the employee's personnel file in accordance with 29 CFR 1910.1020: Access to employee exposure and medical records.. Copies of the Request for Medical Clearance for each respirator wearer will be available on file at the Administration Building.

- The Medical Questionnaire form can be found in Attachment A of this standard.

- The Request for Medical Clearance form can be found in Attachment B of this standard.

5.7. Respirator Training and Fitting

5.7.1. Training

- Workers, upon assignment to an area requiring respirators, will be instructed by their supervisors relative to their responsibilities in the respiratory standard. They will also be instructed in the need, use, limitations, and care of their respirator. The ESH Department is available to assist, monitor, and provide resources for this training.
- Refresher training will be provided at least every 12 months after initial training and/or when changes in the workplace or the type of respirator make the previous training obsolete, inadequacies in the employee's knowledge or use of the respirator indicate that the employee has not retained the requisite understanding or skill, or any other situation arises in which retraining appears necessary to ensure safe respirator use. Records of all training provided to each individual will be maintained by the ESH Department.

5.8. Fit Testing

5.8.1. Employees who use tight fitting respirators will be properly fitted and tested for a face seal prior to use of the respirator. This will be accomplished by following the fit test procedures outlined in this standard (ESH-(4000-WI)-73395 Fit Test Work Instruction). Quantitative fit testing is the preferred method for fit testing of full-face respirators used in the negative pressure mode for protection greater than 10 times the occupational exposure limit (OEL) but not to exceed 50 times the exposure limit. Qualitative fit testing may only be used to fit test negative pressure air-purifying respirators that must achieve a fit factor of 100 or less.

5.8.2. Fit testing will be performed initially upon employee assignment to an area where respirators are required. All tight-fitting respirator models (negative and positive) that will used will be fit tested for each individual. Positive pressure tight fitting respirators will be fit tested in the negative pressure mode.

5.8.3. Additional fit tests will be conducted whenever the employee reports, or the PLHCP, supervisor, or program administrator makes visual observations of changes in the employee's physical condition that could affect respirator fit. Such conditions include, but are not limited to, facial scaring, dental changes, cosmetic surgery, or an obvious change in body weight.

5.8.4. If, after passing a fit test, the employee subsequently notifies management (e.g., supervisor, program administrator, or PLHCP) that the fit of the respirator is unacceptable, the employee will be given a reasonable opportunity to select a different respirator facepiece and to be retested.

- Individual fit testing records (See ESH-(4000-F)-73357 Respirator Fit Test Training and Education Form) will be kept for each employee tested at SURF until the next fit test is performed.

5.8.5. Fit testing of employees with any hair growth such as stubble beard growth, beard or long sideburns that extends under the face seal or interferes with valve function is prohibited.

5.9. Respirator Use

5.9.1. Facepiece seal protection

- Facial hair or any other condition that prevents direct contact between the face and the edge of the respirator will not be permitted with tight fitting half or full facepiece (negative or positive pressure) or loose fitting facepieces. Eyeglasses, goggles, and other personal protective equipment will be worn in a manner that does not interfere with the respirator sealing surface.

- Facial hair or any other condition that interferes with the seal of the respirator facepiece to include the function of exhalation or inhalation valves will not be permitted.
- All respirator users of tight fitting facepieces will perform a user seal check each time they put on the respirator. Methods for performing the user seal checks will be covered in ESH-(4000-WI)-73398 User Seal Check Work Instruction.

5.10. Continuing Respirator Effectiveness

5.10.1. Supervisors will maintain ongoing surveillance of employee exposure or stress. If conditions change such that respirator effectiveness may be affected, the respirator selection will be re-evaluated.

5.10.2. Employees shall leave a work area requiring respirator use under the following conditions:

- To wash face and facepiece as necessary to prevent skin or eye irritation.
- Detection of vapor or gas breakthrough, changes in breathing resistance, or facepiece leakage.
- To replace the respirator, filter, cartridge, or canister.
- Upon malfunction of the respirator.
- If severe discomfort in wearing the respirator is detected.
- Illness of the respirator wearer, including sensation of dizziness, nausea, weakness, breathing difficulty, coughing, sneezing, vomiting, fever or chills.

5.10.3. If an employee leaves the work area for any of the above reasons, they will not re-enter until the specific problem has been identified and corrected.

5.11. Procedures for IDLH atmospheres

5.11.1. For all IDLH atmospheres, ensure that:

- At least one employee is located outside the IDLH atmosphere.
- Visual, voice, or signal line communication is maintained between the employee(s) in the IDLH atmosphere and the employee(s) located outside the IDLH atmosphere.
- A trained rescue team is suitably equipped and located in a position to provide a rescue if needed.

5.12. Voluntary Use

5.12.1. Voluntary use of respirators shall be allowed only under the following conditions:

- SURF shall provide respiratory protection for employees who ask for it or let employees use their own respiratory protection, if such respirator use will not create a hazard.
- SURF shall provide voluntary respirator users with the information contained in ESH-(4000-A)-73401 Voluntary Use of Respirators (1910.134 App D Information for employees using respirators when not required under the standard).
- Fit testing is not mandatory for voluntary respirator use.

5.12.2. Voluntary use of filtering facepieces (also known as “dust masks”) is exempt from enrollment in the respiratory protection standard.

5.13. Respirator Inspection, Maintenance, and Storage

5.13.1. Respirators will be properly maintained to retain their original effectiveness by periodic inspection, repair, cleaning, and proper storage.

5.14. Inspection

5.14.1. The wearer of a respirator will inspect it daily whenever it is in use, prior to use and during cleaning. Respirators used for emergency response purposes shall be inspected and

documented at least monthly by a competent person(s). Spot checks for personnel wearing respirators will be periodically performed by employee's superviser or responsible person to ensure a suitable fit, usage, and condition of each respirator. The use of defective respirators will not be permitted. If a defective respirator is found during inspection, it will be taken out of service and discarded or repaired.

5.15. Repair

5.15.1. During cleaning and maintenance, respirators that do not pass inspection will be replaced or repaired immediately. Repair of the respirator will be done with parts designed for the respirator in accordance with the manufacturer's instructions by an appropriately trained individual. No attempt will be made to replace components or make adjustments, modifications or repairs beyond the manufacturer's recommendations.

5.16. Cleaning

5.16.1. Respirators not discarded after one shift use will be cleaned on a daily basis (or after each use if not used daily) according to the manufacturer's instructions by the assigned employee or other person designated by the Respiratory Protection Program Administrator. Facilities and supplies for cleaning these respirators will be made available. The respirator cleaning procedure is outlined in ESH-(4000-WI)-164625 Respirator Cleaning Work Instruction.

5.17. Storage

5.17.1. Respirators not discarded after one shift use will be stored in a suitable container away from areas of contamination and according to manufacturer's instructions. The respirators will be stored in a location where they are protected from sunlight, dust, heat, cold, moisture, and damaging chemicals and they will be stored in a manner to prevent deformation of the facepiece, exhalation valve, and/or head strap (per manufacturer recommendations). Whenever feasible, respirators not discarded after one shift use will be marked and stored in such a manner to assure that they are worn only by the assigned employee.

5.18. Program Administration and Evaluation

5.18.1. Program Administration

- **10.1.1.** The ESH Department has the responsibility for the administration of the respiratory protection standard. A respiratory protection program administrator (RPA) will be appointed to act on any and all matters relating to the operation and administration of the respiratory protection standard. All employees will cooperate to the fullest extent. The RPA is responsible for ensuring that:
  - Exposure assessments and monitoring of the respiratory hazards are conducted.
  - Worksite-specific procedures for this standard are developed.
  - All associated records are maintained.
  - All standard audits are conducted.

5.18.2. The following physician or licensed health care professional (PLHCP) providers are used for the medical evaluation of each employee who will wear a respirator:

- Designated PLHCP:
  - Medical Facility: Onsite Occupational Health Nurse
  - Address: 630 E. Summit St, Lead South Dakota
- Designated PLHCP:
  - Medical Facility: Black Hills Occupational Medicine
  - Address: 1161 Deadwood Ave, Rapid City South Dakota

5.18.3. SURF is responsible for determining the content and evaluating the results of all required respirator medical evaluations for this standard.

5.18.4. SURF may elect to employ an outside agency for additional help in contaminant identification and measurement, including technical support, air sampling, and laboratory analysis. If any additional environmental safety and health plans are written for the project, they will be included as an attachment to this standard for the designated project.

5.19. Program Evaluation

5.19.1. This standard will be periodically reviewed and evaluated. The standard will be audited by using the procedures outlined in this plan. The evaluations of the workplace will be carried out to ensure that the current written standard is effectively implemented. They will include regular consultations with employees using respirators to assess their view on standard effectiveness and to identify any problems. Factors to be assessed include respirator fit (including the ability to use the respirator without interfering with effective workplace performance), appropriate respirator selection for the hazards to which the employee is exposed, proper respirator use under workplace conditions the employee encounters, and proper respirator maintenance. These factors are included in the Program Evaluation process.

6.0 Documented Information/Related Document

6.1. ESH-(4000-F)-73404 Medical Questionnaire
6.2. ESH-(4000-F)-73403 Medical Clearance for Respirator Use Form
6.3. ESH-(4000-WI)-73395 Fit Test Work Instruction
6.4. ESH-(4000-WI)-73398 User Seal Check Work Instruction
6.5. ESH-(4000-WI)-164625 Respirator Cleaning Work Instruction
6.6. ESH-(4000-F)-73357 Respirator Fit Test Training and Education Form
6.7. ESH-(4000-A)-73401 Voluntary Use of Respirators
6.8. 29 CFR 1910.134: Respiratory Protection
6.9. 29 CFR 1910.1020: Access to employee exposure and medical records.
6.10. 30 CFR 57.15030: Provision and maintenance of self-rescue devices.
6.11. 42 CFR part 84: NIOSH