Respiratory Protection

NIST S 7101.58
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1. PURPOSE

The purpose of the Respiratory Protection Program (RPP) is to prevent NIST employees from breathing airborne hazards when effective engineering controls are not feasible. In addition, the program identifies required training and practices for selecting, using, caring for, and storing respiratory protection.

2. BACKGROUND

a. NIST must meet or exceed the requirements established by the Occupational Safety and Health Administration (OSHA) in 29 Code of Federal Regulations (CFR) 1910.134, Respiratory Protection. Implementation of this suborder through the requirements in Section 6 and the roles and responsibilities in Section 9 exceeds those requirements.

b. This suborder supersedes NIST Health and Safety Instruction (HSI) 17, Respiratory Protection, October 1998.

3. APPLICABILITY

The provisions of this suborder apply to all NIST employees whose exposure to potential airborne hazards could result in their being required to wear, or their voluntarily wearing, respiratory protection to carry out their assigned duties.

4. REFERENCES

a. 29 CFR 1910.134, Respiratory Protection.

b. 29 CFR 1910.1020, Access to Employee Exposure and Medical Records.

c. ANSI Z88.2, American National Standard for Respiratory Protection.

d. ANSI Z88.6, American National Standard for Respiratory Protection – Respirator Use Physical Qualifications for Personnel.

e. Compressed Gas Association (CGA) Commodity Specification for Air, CGA G7.1.

f. NFPA 1500, Standard on Fire Department Occupational Safety and Health Program.

g. NFPA 1852, Standard on Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA).

h. NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services.

5. APPLICABLE NIST OCCUPATIONAL SAFETY AND HEALTH SUBORDERS

a. NIST S 7101.20: Work and Worker Authorization Based on Hazard Reviews;

b. NIST S 7101.21: Personal Protective Equipment;

c. NIST S 7101.23: Safety Education and Training; and

d. NIST S 7101.22: Hazard Signage.

6. REQUIREMENTS[1]

When effective engineering controls are not feasible, or while they are being implemented, respirators must be used to (a) reduce exposures to airborne hazards to levels below applicable occupational exposure limits (OELs), and (b) protect against exposures to atmospheres that are "immediately dangerous to life or health" (IDLH)[2]. Specific respiratory-protection requirements include the occupational exposure limits adopted by NIST; hazard identification; hazard assessment; control methods, including respiratory protection selected by competent persons; respirator medical evaluations; respirator fit testing; respirator use; respirator maintenance and care; breathing air quality; entry and work in IDLH atmospheres; records (other than training records); training; and communication.

[1] The requirements in this section apply to employees who wear respiratory protection in the conduct of their assigned duties, and their management, i.e., they apply to the OUs.

[2] Instances of IDLH atmospheres outside of the Office of Facilities and Property Management and emergency situations would be highly unusual. Only highly-trained personnel may enter or prepare to enter atmospheres known or considered to be IDLH. For additional information, contact OSHE.

a. OELs and IDLH Atmospheres

(1) Employees shall not be exposed to airborne hazards within the personal breathing zone (PBZ) at levels that exceed the OELs adopted by NIST.

(2) The OELs adopted by NIST shall be the permissible exposure limits established by OSHA or the following exposure limits, when these limits are more stringent than those established by OSHA and achieving them is feasible:

(a) Threshold Limit Values established by the American Conference of Governmental Industrial Hygienists; or

(b) Exposure limits established by other authoritative entities, such as the National Institute of Occupational Safety and Health (NIOSH)

(3) Unprotected employees shall not be exposed to IDLH atmospheres.

b. Hazard Identification

(1) If a concern arises[3] regarding potential airborne hazards in an already ongoing activity, a consultation shall be scheduled with a competent person as soon as possible to determine if the airborne hazards could result in exposures that exceed an applicable OEL or could create an IDLH atmosphere.

(2) If the hazard review of a new activity identifies potential airborne hazards, a consultation shall be scheduled with a competent person to determine if the airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere.

(3) If the hazard review of a change in an existing activity identifies new airborne hazards or potential increases in previously identified airborne hazards, a consultation shall be scheduled with a competent person to determine if the airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere.

c. Hazard Assessment

(1) If the consultation with the competent person indicates that airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere, arrangements

[3] Such a concern could be raised by any individual, e.g., a worker, a coworker, a supervisor, a Division Safety Representative, or a competent person.

shall be made for a competent person to assess the hazards using exposure monitoring, mathematical calculations, or other means.

(2) If the competent person cannot identify or reasonably estimate the employee's potential exposure, the atmosphere shall be considered IDLH.

d. Control Methods

(1) When it has been determined by a competent person that, without controls, airborne hazards *would result* in potential exposures that exceed an OEL or constitute an atmosphere known or considered to be IDLH:

(a) Feasible[4] engineering controls shall be implemented in an effort to reduce the level of airborne hazards in the PBZ to less than applicable OELs or to mitigate the atmosphere known or considered to be IDLH.

(b) If the implementation of feasible engineering controls fails to achieve the desired objectives, as determined by a competent person, respiratory protection selected by a competent person shall be provided and used to reduce potential exposures to airborne hazards within the PBZ to less than applicable OELs or to prevent potential exposures to the atmosphere known or considered to be IDLH.[5]

(c) Only respirators selected by the competent person shall be procured.

(d) All respirators, cartridges, filters, and other components shall be provided at no cost to employees.

(2) When it has been determined by a competent person that, without controls, airborne hazards *would not result* in exposures that exceed an OEL or constitute an IDLH atmosphere:

(a) Feasible engineering controls should be implemented in an effort to reduce exposures to airborne hazards in the PBZ.

[4] Feasible means that the OEL is both technologically and economically achievable. Technologically feasible means that there is a reasonable possibility that the agency will be able to meet the OEL in most of its operations by installing engineering controls and implementing work practice controls. Technologically feasible also includes being able to use analytical techniques to measure the airborne hazard at the OEL. For a Federal agency, economically feasible means that complying with the OEL will not require such resources as to threaten the agency's ability to fulfill its mission.

[5] Many precautions in addition to respiratory protection are necessary for employees other than first responders to enter atmospheres known or considered to be IDLH. For further information, contact OSHE.

(b) Respiratory protection may be worn voluntarily if it is determined, based on a consultation with a competent person, that:

i. Such protection will not in itself create a more serious safety or health hazard;

ii. The respiratory protection is selected by a competent person;

iii. Use of the respiratory protection is authorized by the employee's Official First-Level Supervisor; and

iv. Use of the respiratory protection complies with the requirements of this suborder.

e. Respirator Medical Evaluations

(1) All employees who are to wear respirators, except filtering facepieces worn voluntarily, shall arrange for the Health Unit[6] to complete a medical evaluation prior to fit testing.

(2) Additional medical evaluations are required under the following circumstances:

(a) Employees report medical signs or symptoms related to the ability to use a respirator;

(b) The Health Unit, the OSHE Respiratory Protection Program Manager, or the Official First-Level Supervisor recommends reevaluation;

(c) Information from the Respiratory Protection program, including observations made during fit testing and program evaluations, indicates a need; or

(d) A change occurs in workplace conditions, e.g., in physical work effort, protective clothing required, or temperature, that may substantially increase the physiological burden on an employee.

f. Fit Testing

(1) After receiving medical evaluations, employees who are to wear respirators with tight-fitting facepiece shall complete fit testing provided by a competent person:

(a) Prior to initial use of the respirator and at least annually thereafter;

[6] "Provided by the Health Unit" means "provided by a physician or other licensed health-care professional working in the Health Unit".

(b) Pursuant to any change, authorized by a competent person, in respirator make, model, style, or size; and

(c) Pursuant to a change in employee facial shape/structure (dentures, weight gain, facial hair, broken nose, glasses/goggles) that could prevent a good face seal or interfere with the respirator's ability to function properly.

(2) If an employee needs prescription eyewear, regardless of the mask type, he or she must be provided with the appropriate eyewear and respirator type to accommodate that..

g. Respirator Use

(1) All respirators, cartridges, filters, and other procured components shall be used in accordance with manufacturers' specifications.

(2) Labels on filters, cartridges, and canisters shall not be removed and must remain legible.

(3) Cartridges or canisters shall be changed in accordance with the change schedule provided by the competent person or sooner if users feel ill or breakthrough occurs.

(4) Tight-fitting respirators shall not be worn when conditions prevent a good face seal or interfere with the respirator's ability to function properly. Such conditions may include facial hair between the sealing surface of the facepiece and the face, or facial hair that interferes with valve function. Other conditions that may prevent a good face seal include, but are not limited to, scars, absence of teeth/dentures, unusual facial configurations, or wearing objects that project under the facepiece (e.g., corrective glasses or goggles).

(5) Tight-fitting-respirator users shall be monitored[7] by their supervisors for face-to-facepiece seal conditions, and those with interfering conditions shall not be permitted to perform work that requires the use of a respirator.

(6) Seal checks of tight-fitting respirators shall be performed by users prior to use in accordance with 29 CFR Part 1910.134, Appendix B-1, User Seal Check Procedures (Mandatory).[8]

[7] That is, if a supervisor observes or becomes aware that an employee who wears a tight-fitting facepiece has a beard or other factor preventing a tight seal between the face and respirator, the supervisor shall not permit the employee to wear the respirator.

[8] User seal checks are not a substitute for fit tests.

(7) Respirators shall not be loosened or removed in work situations where their use is required.

(8) Respirator users shall leave the respirator use area:

(a) To wash their face and facepiece as necessary to prevent eye or skin irritation associated with respirator use;

(b) If they detect vapor or gas breakthrough, changes in breathing resistance, or leakage of the facepiece;

(c) If they feel ill or disoriented; and

(d) To replace the respirator or filter, cartridge, or canister elements.

h. Respirator Maintenance and Care

(1) Cleaning

(a) When practicable, respirators should be assigned to individual employees for their exclusive use. Permanently assigned respirators can be marked with an indelible marker or in a similar manner that does not affect performance.

(b) Exclusive-use respirators shall be cleaned and disinfected as often as necessary to maintain them in a sanitary condition.

(c) Shared-use respirators shall be cleaned and disinfected by the user after each use.

(d) Emergency-use respirators shall be cleaned and disinfected after each use.

(e) All respirators shall be cleaned prior to storage.

(f) Respirators shall be cleaned and disinfected in accordance with 29 CFR 1910.134, Appendix B-2, Respirator Cleaning Procedures (Mandatory).

(2) Storage

(a) Respirators shall be stored in accordance with the manufacturers' specifications.

(b) All respirators shall be stored to protect them from damage, contamination, dust, sunlight, extreme temperatures, excessive moisture, and damaging chemicals.

(c) All respirators shall be stored to prevent deformation of the facepiece and exhalation valve, and as such should not be stored in such places as lockers or tool boxes unless they are in carrying cases or otherwise protected from damage.

(d) Emergency-use respirators shall be stored in the work area in clearly marked, quickly accessible, protective containers, and in an adequate number in each area in which they may be needed.

(3) Inspection

(a) All respirators used in routine situations shall be inspected before each use and during cleaning.

(b) Respirator inspections shall include the following, as applicable to the respirator being used:

i. A check of respirator function, tightness, and connections;

ii. A check of the condition of the various parts, including, but not limited to, the facepiece; head straps; valves; connecting tube; and cartridges, canisters or filters; and

iii. A check of elastomeric parts for pliability and signs of deterioration.

(c) Emergency-Use Respirators

i. All emergency-use respirators shall be inspected at least monthly and in accordance with the manufacturers' recommendations.

ii. All emergency-use respirators shall be checked for proper function before and after each use.

iii. Emergency escape-only respirators shall be inspected before being carried into the workplace.

iv. Emergency-use respirator inspections shall document the following information:

(i) Date the inspection was performed;

(ii) Name of the person who performed it;

(iii) Findings;

(iv) Any required remedial action; and

(v) A serial number or other means of identifying the inspected respirator.

v. Emergency-use respirator inspections shall be documented:

(i) On tags or labels that are attached to the respirators or kept within their storage compartments; or

(ii) In inspection reports stored in hard copy or electronic form.

(d) SCBAs

i. In addition to the requirements in Section h(3)(a), (b), and (c)i-iii:

(i) SCBAs shall be inspected monthly.

(ii) Air and oxygen cylinders shall be maintained in a fully charged state and shall be recharged when the pressure falls to 90% of the manufacturer's specified pressure level.

(iii) Regulators and warning devices shall be inspected to determine that they function properly.

(iv) Inspection tags shall be attached to SCBA storage units and tamper-evident seals should be affixed to the storage units to indicate whether they have been opened.

ii. If SCBAs are maintained for emergency use, inspections shall be documented in accordance with the requirements in Sections h(3)(c)iv-v.

(4) Repairs

(a) Respirators that fail an inspection or are found to be defective shall be removed from service immediately, marked or tagged as out of service, and discarded or repaired.

(b) Particulate filters shall be replaced when they become soiled or damaged or users detect increased breathing resistance.

(c) Respirator repairs or adjustments are to be made only by appropriately trained persons and shall use only the respirator manufacturer's parts designed for that respirator.

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

(d) Repairs shall be made according to manufacturers' specifications for the type and extent of repairs to be made.

i. Respirator Maintenance and Care – Additional Requirements for SCBAs Used in Firefighting (*applicable to the NIST Fire Protection Group only*)

(1) SCBAs used in firefighting must comply with the additional requirements of NFPA 1500, Fire Department Occupational Safety and Health Program Standard, including the following guidelines:

(a) NFPA 1852, Selection, Care, and Maintenance of Open-Circuit Self-Contained Breathing Apparatus (SCBA) Standard.

(b) NFPA 1852, Chapter 6, on the care, cleaning, and storage of SCBA equipment.

(c) NFPA 1852, Chapter 7, on inspecting and maintaining of SCBAs.

i. SCBAs assigned to on-duty NIST employees must be inspected at the beginning of each duty shift.

ii. SCBAs which are on duty assignment, but not currently assigned to an individual employee, must be inspected weekly.

iii. In all cases, SCBAs must be inspected, at a minimum, on a weekly basis.

iv. If the SCBA incorporates an integrated Personal Alert Safety System (PASS), it also must be inspected as part of the SCBA inspection at the beginning of each duty shift while assigned to an employee or weekly if the SCBA is not assigned to an individual duty employee.

(d) NFPA 1981, Chapter 4, on flow testing of SCBAs.

i. SCBAs shall be flow tested at least annually.

j. Breathing Air Quality in SCBAs and Airline Respirators

(1) Compressed breathing air procured by the OUs 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.

(2) Cylinders supplying breathing air shall meet Department of Transportation requirements (Requirement for DOT Specification Cylinders) and have certificates of analysis that show they meet or exceed Grade D breathing-air requirements.

(3) Compressors supplying breathing air shall be constructed and situated in a way that prevents entry of contaminated air into the air-supply system.

k. Entry and Work in IDLH Atmospheres

(1) For entry and work in atmospheres known or considered to be IDLH, the following procedures shall be followed:

(a) A minimum of one employee shall be located outside the IDLH atmosphere.

i. The use of two employees inside the work area and two employees outside the work area is recommended.

(b) Visual, voice, or signal line communication shall be maintained between employees in the IDLH atmosphere and employees located outside the IDLH atmosphere.

(c) Employees located outside the IDLH atmosphere shall be trained and equipped to provide effective emergency rescue.

(d) A supervisor or designee shall be notified before employees outside the IDLH atmosphere enter to provide emergency rescue.

(e) In addition to having the respiratory protection selected by a competent person, employees trained to provide emergency rescue in IDLH atmospheres[9] shall be equipped with pressure-demand or positive-pressure SCBAs, or a positive-pressure supplied-air respirator with auxiliary SCBA, and have either the appropriate retrieval equipment for removing individuals from the IDLH atmosphere (such as a retrieval line or a chest or full-body harness), or an equivalent means of rescue when retrieval equipment is not available.

(2) For interior structural firefighting, the following procedures shall be followed in addition to those in Section l(1) (*applicable to the NIST Fire Protection Group only*):

(a) Firefighters shall only enter the IDLH atmosphere in pairs and shall remain in visual or voice contact with one another at all times.

(b) At least two firefighters shall be located outside the IDLH atmosphere the entire time firefighters are within it.

i. One of the two firefighters located outside the IDLH atmosphere may be assigned to an additional role, such as incident commander in charge of the emergency or safety officer, so long as the individual is able to perform assistance or rescue activities without jeopardizing the safety or health of any firefighter working at the incident.

(c) Firefighters may perform emergency rescue activities before an entire team has assembled.

l. Records (Other than Training Records)

(1) Results of hazard assessments conducted by competent persons of potential airborne hazards or IDLH atmospheres shall be noted, referenced, or included as part of the activity-hazard-review documentation.

(2) Records[10] of monthly inspections of emergency-use respirators, including emergency-use SCBAs, shall be maintained until replaced following a subsequent inspection.

[9] To provide emergency rescue in IDLH atmospheres, individuals would require a high level of training in specialized emergency response. Such training is outside the scope of this suborder. For additional information, contact OSHE.

[10] The records referenced in Sections 6n(2)-(6) could take the form of tags, labels, or reports.

(3) Records of inspections of emergency escape-only respirators prior to their being carried into the workplace shall be maintained.

(4) Records of quarterly air-quality testing for air supplied via compressors shall be maintained until replaced following a subsequent air-quality test.

(5) Records of annual flow testing of all SCBAs shall be maintained until replaced following a subsequent flow test.

(6) Records of weekly inspections of SCBAs used in firefighting shall be maintained until replaced following a subsequent inspection.

m. Training

(1) Employees required to wear respirators, or who voluntarily wear respirators other than filtering facepieces, shall complete:

(a) Training provided by OSHE on the applicable elements of the RPP;

(b) Retraining provided by OSHE on the applicable elements of the RPP at least annually; and

(c) Retraining identified by the Official First-Level Supervisor whenever:

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

ii. Inadequacies in the employee's knowledge or use of the respirator indicate the need for retraining; or

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

(2) Employees who voluntarily wear filtering facepieces shall complete:

(a) Training provided by OSHE on the applicable elements of the RPP.

(3) Official First-Level Supervisors of employees required to wear respirators, or who voluntarily wear respirators other than filtering facepieces, shall complete training provided by OSHE on the elements of the RPP applicable to the employees they supervise.

(4) Training shall be documented and recorded in accordance with the requirements, roles, and responsibilities in the Safety Education and Training suborder.

n. Communication

(1) Hazard signage shall be posted at entrances to areas in which respiratory protection is required. Appendix A provides an example of hazard signage meeting these requirements.

(2) Electronic or hard copies of this suborder and of 29 CFR 1910.134 shall be made available to affected employees.

7. DEFINITIONS

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

b. Airborne Hazard – Breathing air contaminated with harmful dusts, fogs, fumes, mists, gases, smokes, sprays, or vapors.

c. Air-Purifying Respirator – A type of respirator with an air-purifying filter, canister or cartridge, which removes specific air contaminants by passing ambient air through the air-purifying element.

d. Atmosphere-Supplying Respirator – A respirator that supplies the 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.

e. Canister or Cartridge – Container with a filter, sorbent, catalyst, or combination of these items that removes specific contaminants from the air passed through the container.

f. Competent Person – A CIH or CSP in the NIST Office of Safety, Health and Environment (OSHE) or another NIST Organizational Unit (OU), a consultant CIH or CSP , or an individual directed by a CIH or CSP, who is capable of anticipating, recognizing, controlling, and evaluating potential occupational hazards.

g. Certified Industrial Hygienist (CIH) – An individual who is board certified by the American Board of Industrial Hygiene and has met the minimum requirements for education experience, and through examination has demonstrated a minimum level of knowledge in occupational health subject areas such as respiratory protection.

h. Certified Safety Professional (CSP) – An individual who is board certified by the Board of Certified Safety Professionals and has met the professional challenge of demonstrating competency through education, experience, and examination.

i. Dust Mask – See Filtering Facepiece.

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

k. Filtering Facepiece – Also referred to as a dust mask, is a negative pressure particulate respirator with a particulate filter as an integral part of the facepiece or with the entire facepiece composed of the filtering media.

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

m. Fit Test – Protocol to quantitatively or qualitatively evaluate the fit of a tight-fitting respirator on an individual.

n. Immediately Dangerous to Life or 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. An atmosphere is considered IDLH when the airborne hazard cannot be identified, reasonably estimated, or the atmosphere is oxygen deficient (<19.5% oxygen by volume).

o. Loose-Fitting Facepiece – A respiratory inlet covering designed to form a partial seal with the face.

p. 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.

q. Personal Breathing Zone (PBZ) – The zone encompassing the nose and mouth and a hemisphere forward of the shoulders with a radius of 6 to 9 inches (~ 1 foot sphere, with nose being at the center of the sphere).

r. Potential Airborne Hazard – A hazard with the potential to become airborne within the PBZ or to create an IDLH atmosphere.

s. Powered Air-Purifying Respirator (PAPR) – A positive-pressure air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

t. Respiratory Inlet Covering – That portion of a respirator that forms the protective barrier between the user's respiratory tract and an air-purifying device, or breathing air source, or both.

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

v. 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 user.

w. Tight-Fitting Facepiece – A respiratory inlet covering that forms a complete seal with the face.

8. ACRONYMS

a. CGA – Compressed Gas Association

b. NFPA – National Fire Protection Association

c. NIOSH – The National Institute for Occupational Safety and Health

d. OSHA – Occupational Safety and Health Administration

e. OSHE – Office of Safety, Health, and Environment

f. OU – Organizational Unit

g. PBZ – Personal Breathing Zone

h. RPP – Respiratory Protection Program

9. ROLES AND RESPONSIBILITIES

a. Employees Engaged in Activities Involving Airborne Hazards that Could Result in Exposures that Exceed an OEL or Could Create an IDLH Atmosphere:

(1) If a concern arises regarding potential airborne hazards in an already ongoing activity, schedule a consultation with a competent person as soon as possible to determine if the airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere;

(2) If the hazard review of a new activity identifies potential airborne hazards, schedule a consultation with a competent person to determine if the airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere;

(3) If the hazard review of a change in an existing activity identifies new airborne hazards, or potential increases in previously identified airborne hazards, schedule a consultation with a competent person to determine if the airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere;

(4) Inform Official First-Level Supervisors of any consultations scheduled with competent persons and of the results of those consultations;

(5) If consultation with a competent person indicates that airborne hazards could result in exposures that exceed an OEL or could create an IDLH atmosphere, arrange for a competent person to assess the airborne hazards;

(6) When it has been determined by a competent person that, without controls, airborne hazards *would result* in potential exposures that exceed an OEL or constitute an atmosphere known or considered to be IDLH, implement feasible engineering controls in an effort to reduce the level of airborne hazards in the PBZ to less than applicable OELs or to mitigate the atmosphere known or considered to be IDLH;

(7) If feasible engineering controls fail to achieve the desired objectives, use respiratory protection selected by a competent person to reduce potential exposures to airborne hazards within the PBZ to less than applicable OELs or to prevent potential exposures to the atmosphere known or considered to be IDLH; [11] and

(8) Ensure that the results of hazard assessments, i.e., the results of consultations, including the results of exposure monitoring, mathematical calculations, or other means used to assess the airborne hazards, are noted, referenced, or included as part of the activity-hazard-review documentation.

b. Employees Required to Wear Respirators, or Who Voluntarily Wear Respirators Other than Filtering Facepieces (in addition to the responsibilities of above):

(1) Obtain medical evaluations in accordance with the requirements in Section 6e;

(2) Obtain fit tests in accordance with the requirements in Section 6f, if applicable;

[11] Many precautions in addition to respiratory protection are necessary for employees other than first responders to enter atmospheres known or considered to be IDLH. For additional information, contact OSHE.

(3) Use, maintain, and care for the respirators provided by their Official First-Level Supervisors in accordance with the requirements in Section 6g, 6h, and 6i, as applicable, and their training as specified in Section 6m;

(4) Ensure that breathing air meets the requirements in Section 6j, if applicable;

(5) Enter and conduct work in IDLH atmospheres in accordance with the procedures in Section 6k, if applicable;

(6) Complete the training specified in Section 6m, as assigned by their Official First-Level Supervisors; and

(7) Request additional training as duties change or as otherwise needed.

c. Employees Who Voluntarily Wear Filtering Facepieces:

(1) Complete the training specified in Section 6m, as assigned by their Official First-Level Supervisor.

d. Official First-Level Supervisors of Any of the Above Employees:

(1) Ensure that competent persons from outside of OSHE engaged by the OU to conduct hazard assessments, select respiratory protection, or provide fit testing understand the responsibilities delineated below for competent persons;

(2) Provide the results of hazard assessments resulting in employees they supervise being required to wear respiratory protection, or resulting in their voluntarily wearing respiratory protection, to all such affected employees, the OSHE RPP Manager, and the Health Unit for inclusion in employee medical files;

(3) Ensure that the results of hazard assessments are noted, referenced, or included as part of the activity-hazard-review documentation;

(4) Make electronic or hard copies of this suborder and of 29 CFR 1910.134 available to employees they supervise who are required to, or voluntarily, wear respiratory protection;

(5) Provide affected employees with the respiratory protection selected by a competent person, at no cost to affected employees;

(6) Authorize the voluntary use of respirators by employees they supervise;

(7) Ensure that records, other than training records, are maintained in accordance with the requirements in Section l;

(8) Assign training to the affected employees they supervise in accordance with the requirements in Section 6m and do so when:

(a) Employees enter on duty;

(b) Employees' duties change; and

(c) Special circumstances arise such as those indicated in Section 6m(1)(c).

(9) Ensure that training specified in Section 6m(1)(c) is documented and recorded in accordance with the requirements, roles, and responsibilities in the Safety Education and Training suborder;

(10) If employees they supervise are required to wear respirators, or are to voluntarily wear respirators other than filtering facepieces, complete the training specified in Section 6m for Official First-Level Supervisors; and

(11) Ensure that hazard signage meeting the requirements in Section 6n is posted at entrances to areas in which respiratory protection is required.

e. Chief Safety Officer:

(1) Assign an OSHE employee to serve as the OSHE Safety Program Manager for the RPP at both the Gaithersburg and Boulder sites.[12]

f. OSHE Respiratory Protection Program Manager:

(1) Administer the RPP in accordance with the requirements of 29 CFR 1910.134;

(2) Ensure that electronic or hard copies of this suborder and of 29 CFR 1910.134 are made available to the Health Units;

[12] The OSHE Respiratory Protection Program Manager shall carry out the roles of "Program Administrator" identified in 29 CFR 1910.134.

(3) Retain all fit-testing records until the next required fit tests have been administered and received and make such records available to affected employees upon request;

(4) Ensure that affected employees are notified when annual fit testing and training are due;

(5) Ensure that training provided by OSHE on the RPP is available and meets the requirements of 29 CFR 1910.134(k), Training and Information;

(6) Ensure that training provided by OSHE on the RPP is documented in NIST's electronic safety training application;

(7) Ensure that non-web-based training provided by OSHE on the RPP and completed by affected employees is recorded in NIST's electronic safety training application;

(8) Assist NIST staff in the development of signage that complies with the requirements of this suborder and the NIST Hazard Signage Program; and

(9) Implement procedures to evaluate program effectiveness.

g. Competent Persons:

(1) Consult with employees to determine if airborne hazards could result in exposures that exceed an applicable OEL or could create an IDLH atmosphere;

(2) When airborne hazards could result in exposures that exceed an applicable OEL or could create an IDLH atmosphere, conduct exposure monitoring or use mathematical calculations or other means to assess the hazard, document the results in writing, and provide those results to the employee who scheduled the assessment and his or her Official First-Level Supervisor within 15 working days after the receipt of the results or within the time frame specified in any applicable substance-specific OSHA standard;

(3) When it has been determined that employees must wear respiratory protection:

(a) Specify the necessary protection in accordance with 29 CFR 1910.134(d), Selection of Respirators;

(b) Provide the Health Unit with the following information:

i. The type and weight of the respirator to be used;

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

iii. The expected physical work effort;

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

v. Temperature and humidity extremes that may be encountered;

(4) Provide employees who have completed their medical examinations with fit testing in accordance with 29 CFR 1910(f), Fit Testing;

(a) Provide fit-testing records to the OSHE RPP Manager.

h. Health Units:

(1) Administer a respiratory-protection medical evaluation program in accordance with 29 CFR 1910.134(e), Medical Evaluation, and 29 CFR 1910.1020, Access to Employee Exposure and Medical Records.

10. AUTHORITIES

There are no authorities specific to this suborder alone.

11. DIRECTIVE OWNER

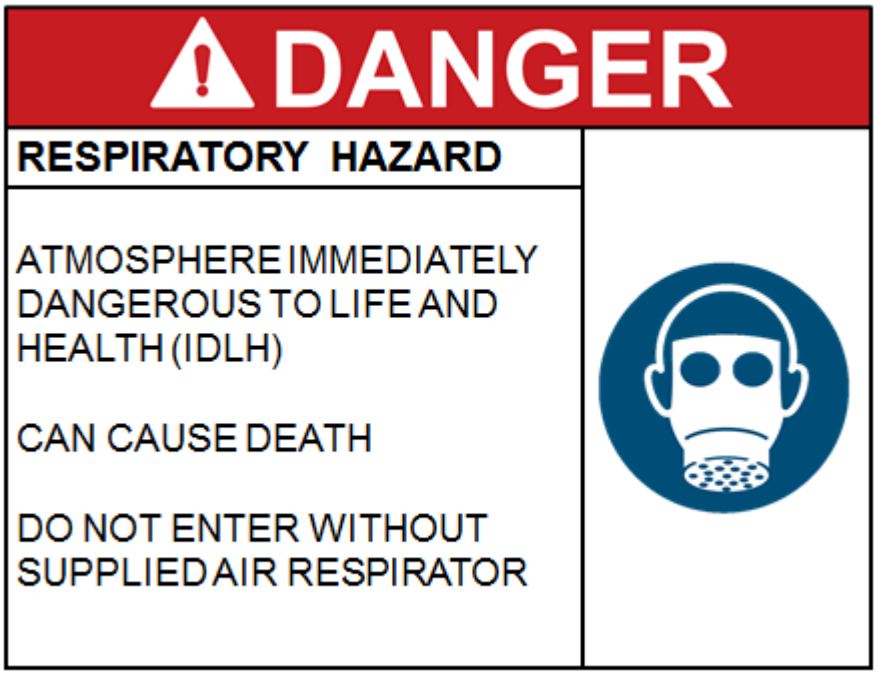
Chief Safety Officer.

12. APPENDICES

a. Hazard Signage

b. Revision History

Appendix A. Hazard Signage



Appendix B. Revision History

Revision	Date	Responsible Person	Description of Change
1	01/07/2021	April Camenisch	Updated suborder links. Added revision history appendix.