
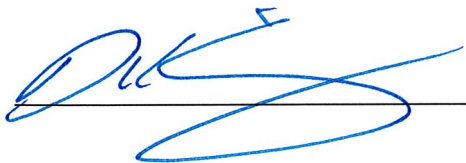


RESPIRATOR PROGRAM REQUIREMENTS BSB- 0200-05

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BOILER SAFETY BUREAU
STANDARD OPERATING PROCEDURE MANUAL

1.0 PURPOSE

To provide a mechanism for the selection of respiratory protection, requirements for the use, care, cleaning, and disposal of respiratory protective equipment, and the training of Boiler Safety Bureau (Bureau or BSB) employees in their use.

2.0 SCOPE

This program is applicable to all situations where an employee of the BSB uses any type of respiratory protection equipment in the performance of their assigned duties.

Any employee who voluntarily wears a respirator when a respirator is not required, is subject to the medical evaluation, cleaning, maintenance, and storage elements of this program, and must be provided with certain information specified in this section of the program. Employees who voluntarily wear filtering facepieces (dust masks) are not subject to the medical evaluation, cleaning, storage and maintenance provisions of this program. Only NIOSH certified respirators (filtering facepiece, dust masks) may be utilized.

3.0 PERSONNEL RESPONSIBILITIES

- 3.1 The Bureau Chief has the overall responsibility for implementation of this procedure.
- 3.2 Supervisors have the responsibility to assure their assigned personnel adhere to this procedure.
- 3.3 Bureau personnel (Employees or Inspectors) required to use respirators shall follow the requirements outlined in this procedure.
- 3.4 The Program Administrator is responsible for administering the respiratory protection program. Duties shall include:
 - 1. Identifying work areas, processes or tasks that require workers to wear respirators, and evaluating hazards.
 - 2. Selection of respiratory protection options.
 - 3. Monitoring of respirator use to ensure that respirators are used in accordance with their certifications.
 - 4. Arranging for and conducting training.
 - 5. Ensuring the proper storage and maintenance of respiratory protection equipment.
 - 6. Assure qualitative fit testing is performed before the employee uses the approved respirator.
 - 7. Administering the medical surveillance program.
 - 8. Maintaining records required by the program.
 - 9. Updating the written program when needed.
 - 10. Monitor past use and evaluate future needs of respiratory protection.

4.0 DEFINITIONS

4.1 The following definitions are applicable in this procedure:

- 4.1.1 Air contaminants—Substances listed in 13 NCAC 7F.0101(a)(4), Tables Z-1, Z-2, and Z-3, and similar hazardous substances that may be reasonably expected to be suspended in the breathing air of an environment.
- 4.1.2 Air-purifying respirators—Respirators that draw ambient air through an air-purifying element to remove air contaminants.
- 4.1.3 Negative-pressure respirators—Respirators that fit tightly to the face, where ambient air is drawn through the air-purifying element by the pressure of the inhalation of the wearer, creating a lower air pressure inside the face piece than the outside air.
- 4.1.4 Positive-pressure air-purifying respirators (PAPRs)—Respirators where ambient air is drawn through the air-purifying element by a motor or similar device and pumped into the face piece, creating a greater air pressure inside the face piece than the outside air.
- 4.1.5 Atmosphere-supplying respirators—Respirators that provide air to the wearer from a source other than the ambient air, such as an air cylinder or air compressor. Two types are:
 - a) Self-Contained Breathing Apparatus (SCBA)—An atmosphere-supplying respirator where the breathing air is designed to be carried by the user.
 - b) Supplied-Air Respirator (SAR)—An atmosphere-supplying respirator where the breathing air is supplied through an air line.
- 4.1.6 Canister or Cartridge—A container with a filter, sorbent, catalyst or combination that removes specific contaminants from air passed through the container.
- 4.1.7 Exposure—The potential or actual exposure to a concentration of air contaminants that would occur if the Employee were not using respiratory protection.
- 4.1.8 Fit factor—A quantitative estimate of the fit of a particular respirator to a specific individual, which typically estimates the ratio of the concentration of a substance in the ambient air to its concentration inside the respirator when worn.
- 4.1.9 HEPA filter—A high-efficiency particulate air filter approved by NIOSH under 40 CFR Part 84.

- 4.1.10 Immediately Dangerous to Life and Health (IDLH)—An atmosphere that poses an immediate threat to life, which would cause irreversible adverse health effects or would impair an individual's ability to escape from the environment. For the purposes of this policy, potential oxygen deficient atmospheres are IDLH.
- 4.1.11 Particulates—Air contaminants that are in solid or liquid states, such as dusts, fumes, mists, fibers and/or radon daughters.
- 4.1.12 Permissible Exposure Limit (PEL)—The maximum concentration of an air contaminant to which a worker is allowed to be exposed in accordance with Table Z1 of 13 NCAC 7F.0101 and the stated exposure limits in 29 CFR Part 1910 Subpart Z.
- 4.1.13 Parts per million (PPM)—A measurement of the parts of an air contaminant per million parts of air.
- 4.1.14 Milligrams per cubic meter (mg/m³)
- 4.1.15 Fibers per cubic centimeter (f/cc³)
- 4.1.16 Micrograms per cubic meter (µg/m³)

5.0 HEALTH and SAFETY ISSUES

Inspectors are always encouraged to utilize personal protective equipment when performing inspections. Inspectors should be aware of any known hazards, and always be looking for any potential or unforeseen dangers in their surroundings.

6.0 PROCEDURE

6.1 RESPIRATOR SELECTION

- 6.1.1 The BSB does not operate or maintain any facility where respiratory protection is required, however employees of the BSB do perform boiler and pressure vessel inspections at sites where respiratory hazards may be present.
- 6.1.2 Respirators will be selected and approved for use by the Program Administrator. The selection will be based upon the physical and chemical properties of the air contamination and the concentration level likely to be encountered by the Inspectors.
- 6.1.3 All respirators shall be NIOSH approved. Respirators that are currently approved for use are:
 - a) 3M 6000 Series – Half Face

Note: Whenever the exposure to respiratory hazards cannot be identified or reasonably estimated or there is an oxygen deficiency, the BSB employee shall consider the atmosphere to be “Immediately dangerous to life or health (IDLH)”

6.2 MEDICAL EVALUATIONS

- 6.2.1 The BSB will provide for a medical evaluation of each inspector to determine their ability to use a respirator, before the inspector is fit tested or required to use the respirator in the workplace.
- 6.2.2 The BSB shall identify a physician or other licensed health care professional (PLHCP) to perform medical evaluations using a medical questionnaire or an initial medical examination that obtains the same information as the medical questionnaire.
- 6.2.3 The Program Administrator will provide the PLHCP the following:
 - a) Copy of the BSB Respiratory Protection Program.
 - b) Copy of CFR 1910.134-Section (e) (Medical Evaluation).
 - c) The type and weight of the respirator to be used by the inspector.
 - d) The duration and frequency of respirator use.
 - e) The expected physical effort.
 - f) Additional protective clothing and equipment to be worn.
 - g) Temperature and humidity extremes that may be encountered.
- 6.2.4 The BSB medical evaluation shall obtain the same information requested by the questionnaire in Sections 1 and 2 Part A of Appendix C of CFR 1910.134-Section (e) (Medical Evaluation).
- 6.2.5 The BSB will ensure that a follow-up medical examination is provided for an Inspector who gives a positive response to any question among questions 1-8 in Section 2, Part A of Appendix C or whose initial medical examination demonstrates the need for a follow-up medical examination. The PLHCP shall determine what medical tests, consultations, or diagnostic procedures are necessary to make a final determination.
- 6.2.6 Medical questionnaires and examinations shall be administered confidentially during the employee’s normal working hours. The medical questionnaire shall be administered in a manner that ensures that the Inspector understands its content.

- 6.2.7 The BSB shall provide the Inspector with an opportunity to discuss the questionnaire and examination results with the PLHCP.
- 6.2.8 The BSB will determine an employee's ability to use a respirator by obtaining a written recommendation from the PLHCP. The written recommendation shall include any limitations on respirator use and the need for any follow-up medical evaluations. The Inspector shall be given a copy of the written recommendation from the PLHCP.
- 6.2.9 After an Inspector has received clearance and begun to wear a respirator additional medical evaluations will be provided under the following circumstances:
 - (a) The inspector reports signs and/or symptoms related to their ability to use a respirator, such as shortness of breath, dizziness, chest pains, or wheezing.
 - (b) The PLHCP or the Inspector's supervisor informs the Program Administrator that the Inspector needs to be reevaluated.
 - (c) Information from this program, including observations made during fit testing and program evaluation, indicates a need for reevaluation.
 - (d) A change occurs in workplace conditions that may result in an increased physiological burden on the employee.

6.3 FIT TESTING

- 6.3.1 Before an Inspector can be required or voluntarily use any respirator with a negative or positive pressure tight-fitting facepiece, the Inspector must be fit tested with the same make, model, style and size of the respirator that will be used.
- 6.3.2 The Program Administrator will assure fit tests are performed by a physician using a qualified fit testing procedure when there is a need for an Inspector to use respiratory protection.
- 6.3.3 The Program Administrator will determine when/if Quantitative Fit Testing (QNFT) is required.

6.4 PROCEDURES FOR PROPER USE

- 6.4.1 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 or full facepieces (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.
- 6.4.2 Facial hair or any condition that interferes with the function of exhalation or inhalation valves will not be permitted.
- 6.4.3 All users of tight fitting facepieces will perform a user seal check each time they put on the respirator. Methods for performing user seal checks will be covered in Inspector training.
- 6.4.4 The Inspector is responsible to leave the area where a respirator is being worn in the event the effectiveness of the respirator is in question. Some examples where effectiveness may be in question follow:
 - a) The respirator needs to be cleaned.
 - b) Detection of vapors or gas breakthrough.
 - c) Changes in breathing resistance.
 - d) Facepiece leakage.
 - e) Any malfunction of the respirator.
 - f) Severe discomfort while wearing the respirator.
 - g) Dizziness, nausea, weakness, vomiting, breathing difficulty, fever, chills, coughing.
- 6.4.5 Inspectors should immediately leave the work area where any respiratory protection is required in the event of an emergency before removing their respiratory protection. Inspectors will not be trained as or expected to be first responders for any emergency situation that requires respiratory protection.

- 6.4.6 This program does not allow any Inspector to work in an immediately dangerous to life or health (IDLH) atmosphere.

Note: IDLH means 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.

6.5 MAINTENANCE OF EQUIPMENT

- 6.5.1 The Inspector is responsible for the proper cleaning, disinfecting, storing, and inspecting respirators issued to them.

- 6.5.2 The following procedure is to be used when cleaning and disinfecting respirators:

- a) Remove cartridges or filters from the respirator.
- b) Wash the respirator in a mild detergent with warm water. Don't use solvents.
- c) Rinse completely in clean warm water.
- d) Wipe the respirator with disinfectant wipes (70%Isopropyl Alcohol).
- e) Air dry in a clean area.
- f) Replace the filter or cartridge.
- g) Place in clean, dry plastic bag or other air tight container.

- 6.5.3 The Inspector shall inspect the respirator before each use as follows:

- a) Check the facepiece for cracks, tears or holes.
- b) Check the headstraps for breaks, tears, or broken buckles.
- c) Check the valves for residue or dirt.
- d) Check the filter cartridges for distortion, dirt, dents, missing or worn gaskets.
- e) Check that the cartridge is proper for the hazard.
- f) The Inspector shall discard any respirator that does not pass inspection.

- 6.5.4 The Inspector shall change out P100 filters when they first experience difficulty breathing while wearing the respirator.

- 6.5.5 Other types of filters and cartridges will be replaced according to manufacturers' recommendations. The Inspector shall consult the Program Administrator regarding replacement schedules.

6.6 TRAINING

- 6.6.1 Training will be provided to all Inspectors and Supervisors by the Program Administrator prior to the use of any respirator.
- 6.6.2 Respiratory training will be conducted annually and include the hazards that Inspectors may encounter. The proper use, putting on and removing, limitations on their use and the maintenance of respirators will also be included in the annual training.

6.7 EVALUATION OF PROGRAM

- 6.7.1 This program shall be periodically reviewed and evaluated every 12 months. The program will be evaluated using a procedure that is written to ensure that the program is effectively being implemented. Inspectors and supervisors will be consulted during the review and evaluation process. Any problems that are identified shall be corrected.

7.0 CUSTOMER SERVICE REQUIRMENTS

The purpose of following this procedure is to provide the customer, be it the public, employees of the Bureau, or other state agencies, with the most efficient service, information, training and assistance possible.

8.0 ***DATA and RECORD MANAGEMENT***

Records shall be maintained in accordance with the Functional Schedule for North Carolina State Agencies as adopted by State Archives, a Division of the North Carolina Department of Natural and Cultural Resources.