10A NCAC 15 .1620 USE OF INDIVIDUAL RESPIRATORY PROTECTION EQUIPMENT

(a) If the licensee uses respiratory protection equipment to limit intakes of radioactive material, the licensee shall:

(1) use respiratory protection equipment that is tested and certified by the National Institute for Occupational Safety and Health (NIOSH);

(2) if the licensee wishes to use any equipment that has not been tested or certified by NIOSH, or for which there is no schedule for testing or certification, submit an application to the agency for authorized use of that equipment, including a demonstration by testing, or a demonstration on the basis of reliable test information, that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use;

(3) implement and maintain a respiratory protection program that includes:

(A) air sampling sufficient to identify the potential hazard, permit proper equipment selection, and estimate exposures;

(B) surveys and bioassays, as appropriate, to evaluate actual intakes;

(C) testing of respirators for operability immediately prior to each use;

(D) written procedures regarding: monitoring, including air sampling and bioassays; supervision and training of respirator users; fit testing; respirator selection; breathing air quality; inventory and control; storage, issuance, maintenance, repair, testing, and quality assurance of respiratory protection equipment; recordkeeping; and limitations on periods of respirator use and relief from respirator use;

(E) determination by a physician prior to initial fitting of a face sealing respirator, prior to the first field use of a non-face sealing respirator, and at least every 12 months thereafter or periodically at a frequency determined by a physician, that the individual user is physically able to use the respiratory protection equipment; and

(F) Fit testing, with fit factor ≥ 10 times the APF for negative pressure devices, and a fit factor ≥ 500 for any positive pressure, continuous flow, and pressure-demand devices, before the first field use of tight fitting, face sealing respirators and annually thereafter. Fit testing must be performed with the facepiece operating in the negative pressure mode.

(4) advise each respirator user that the user may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other conditions that might require such relief;

(5) use equipment within limitations for type and mode of use and provide for vision correction, effective communication, low temperature work environments, the concurrent use of other safety or radiological protection equipment, and assurance that other such equipment will be used in such a way as not to interfere with proper operation of the respirator.

(6) provide standby rescue personnel whenever one-piece atmosphere-supplying suits, or any combination of supplied air respiratory protection devices and personnel protective equipment are used from which an unaided individual would have difficulty extricating himself or herself. The standby rescue personnel shall:

(A) be equipped with respiratory protection devices or other apparatus appropriate for the potential hazards identified by the licensee;

(B) observe or otherwise maintain continuous communication with the workers through visual, voice, signal line, telephone, radio, or other means suitable for the environment;

(C) be immediately available to assist workers in the event of a failure of the air supply or for any other reason that requires relief from distress;

(D) be immediately available in sufficient number to assist all users of this type of equipment and to provide effective emergency rescue, if needed.

(7) provide atmosphere-supplying respirators with respirable air of grade D quality or better as defined by the Compressed Gas Association in publication G-7.1, "Commodity Specification for Air," 1997 and included in Title 29 CFR 1910.134(i)(1)(ii)(A) – (E) of the Occupational Safety and Health Administration. Grade D quality air criteria include:

(A) Oxygen content of 19.5% - 23.5%;

(B) condensed Hydrocarbon content of 5 milligrams per cubic meter of air or less;

(C) Carbon Monoxide (CO) content of 10 ppm or less;

(D) Carbon Dioxide content of 1,000 ppm or less; and

(E) lack of noticeable odor.

(8) ensure that no objects, materials or substances, such as facial hair, or any conditions that interfere with the face-to-facepiece seal or valve function, and that are under the control of the respirator wearer, are present between the skin of the wearer's face and the sealing surface of a tight-fitting respirator facepiece.

(b) In estimating the dose to individuals from intake of airborne radioactive materials, the concentration of radioactive material in the air that is inhaled when respirators are worn is initially assumed to be the ambient concentration in air without respiratory protection, divided by the assigned protection factor. If the dose is later found to be greater than the estimated dose, the corrected value must be used. If the dose is later found to be less than the estimated dose, the corrected value may be used.

(c) The licensee shall obtain authorization, in writing, from the agency before using assigned protection factors in excess of those specified in Appendix A to 10 CFR Part 20. The agency may authorize the use of higher assigned protection factors upon receipt of an application that:

(1) describes the situation for which a need exists for higher protection factors; and

(2) demonstrates that the respiratory equipment provides the higher protection factors under the proposed conditions of use.

History Note: *Authority G.S. 104E-7(a)(2); 104E-12(a);*
Eff. January 1, 1994;
Amended Eff. January 1, 2005; August 1, 1998;
Transferred and Recodified from 15A NCAC 11 .1620 Eff. February 1, 2015.