

**North Carolina Department of Labor
Occupational Safety and Health Division**

Raleigh, North Carolina

Field Information System

Standards Notice 55A

Subject: Facial hair and respirator use

A. Standard.

29 CFR 1910.134(g)(1)(i)(A) & (B) state, “The employer shall not permit respirators with tight-fitting facepieces to be worn by employees who have facial hair that comes between the sealing surface of the facepiece and the face; or that interferes with valve function; or any condition that interferes with the face-to-facepiece seal or valve function.”

B. Discussion.

The purpose of a respirator is to protect the user from atmospheric hazards that can result in a variety of health effects ranging from respiratory irritation to asphyxiation and death. Whenever respirators are required to be worn, the type of respirator worn and the manner in which it is worn must be:

1. Suitable for the hazards to which the wearer may be exposed;
2. Consistent with the manufacturer’s design and usage parameters,
3. Certified by the National Institute for Occupational Safety and Health (NIOSH) as meeting the approval criteria set forth in 42 CFR Part 84;
4. Consistent with the minimum requirements for a written respiratory protection program as described in 29 CFR 1910.134(c)(1); and
5. Consistent with the requirements in 42 CFR Part 84 regarding selection, fit, use and maintenance of an approved respirator.

Research has shown conclusively that facial hair can interfere with the proper fit of respirators, and thus the level of protection afforded. Beards, mustaches, sideburns, and goatees can cause two main problems with respirator use: (1) prohibit an adequate facepiece-to-face seal, and (2) interfere with the operation of the facepiece exhalation valve.

Facial hair between the facepiece of the respirator and skin can prohibit the facepiece from sealing with the skin. Pulling the respirator straps tighter does not normally provide an adequate fit because the facepiece shape becomes distorted and leaks can develop. In addition, excessively tightened straps can cause discomfort for the wearer who will likely loosen them during the period of wear, changing the facepiece fit. Using petroleum jelly or other viscous material to seal the respirator to the face normally is not effective because of the difficulty and employee aversion to using such a substance.

Skretredt and Loschiavo found in a study of 370 male workers that for employees with facial hair, there was a 246-fold reduction in protection for employees wearing half-mask, negative-pressure respirators and a 330-fold decrease in protection for employees

wearing full-face, negative-pressure respirators. Their conclusion was that this leakage is unacceptable and that facial hair should not be permitted when employees are required to wear negative-pressure respirators.¹

Even for an air-supplied respirator such as an airline or a positive pressure self-contained breathing apparatus (SCBA), there can be a problem. A wearer of such a device can overbreathe the air supplied when moderately heavy to heavy workloads are performed. If there is inadequate sealing of the facepiece, the air contaminant can be pulled inside the facepiece. This would also shorten the service life of the air supply for an SCBA. This problem would also occur when powered-air purifying respirators (PAPRs) such as MSA's PAPR or 3M's Airhat brand are used.²

C. **Interpretation.**

Facial hair between the skin and respirator sealing surface is a condition that prevents a good face seal. A positive qualitative or quantitative fit-test is not acceptable evidence that would permit a tight-fitting respirator to be worn when facial hair is present between the skin and respirator sealing surface or when facial hair could interfere with the operation of the exhalation valve.

D. **Action.**

When an overexposure or an employer requires the use of a respirator, the CSHO will issue a citation for a violation of 29 CFR 1910.134(g)(1)(i) when the employee has facial hair which interferes with the function of the exhalation valve or the seal of the respirator to the face.

G. **Effective Date.**

SN 55 is canceled. This SN is effective on the date of signature. It will remain in effect until revised or canceled by the Director.

Signed on Original
J. Edgar Geddie, Ph.D
Health Standards Officer

Signed on Original
Allen McNeely
Director

8/09/05
Date of Signature

¹ Sketredt, O.T., and Loschiavo, J.G., "Effect of Facial Hair on the Face Seal of Negative-Pressure Respirators," American Industrial Hygiene Association Journal, Vol. 45, No. 1, January 1984, pp. 63-66.

² Held, Bruce J., "Facial Hair and Breathing Protection," The International Fire Chief, December 1980, pp. 25-28.