Chapter HFS 157

APPENDIX D

ASSIGNED PROTECTION FACTORS FOR RESPIRATORS[a]

	Operating mode	Assigned Protection Factors
I. Air Purifying Respirators [Particulate1A[b] only]1A[c]:		
Filtering facepiece disposabled	Negative Pressure	([d])
Facepiece, half [e]	Negative Pressure	10
Facepiece, full	Negative Pressure	100
Facepiece, half	Powered air−purifying respirators	50
Facepiece, full	Powered air−purifying respirators	1000
Helmet/hood	Powered air−purifying respirators	1000
Facepiece, loose−fitting	Powered air−purifying respirators	25
II. Atmosphere supplying respirators [particulate, gases and vapors1A[f]]:		
1. Air−line respirator:		
Facepiece, half	Demand	10
Facepiece, half	Continuous Flow	50
Facepiece, half	Pressure Demand	50
Facepiece, full	Demand	100
Facepiece, full	Continuous Flow	1000
Facepiece, full	Pressure Demand	1000
Helmet/hood	Continuous Flow	1000
Facepiece, loose−fitting	Continuous Flow	25
Suit	Continuous Flow	([g])
2. Self−contained breathing Apparatus (SCBA):		
Facepiece, full	Demand	[1]100
Facepiece, full	Pressure Demand	[1]10,000
Facepiece, full	Demand, Recirculating	[1]100
Facepiece, full	Positive Pressure Recirculating	[1]10,000
III. Combination Respirators:		
Any combination of air−purifying and atmosphere−supplying respirators	(1) Assigned protection factor for type and mode of operation as listed above.	

a These assigned protection factors apply only in a respiratory protection program that meets the requirements of subchapter III of this chapter. The protection factors are applicable only to airborne radiological hazards and may not be appropriate to circumstances when chemical or other respiratory hazards exist instead of, or in addition to, radioactive hazards. Selection and use of respirators for such circumstances must also comply with U.S. Department of Labor regulations.

Radioactive contaminants for which the concentration values in Column 3 of Appendix E are based on internal dose due to inhalation may, in addition, present external exposure hazards at higher concentrations. Under these circumstances, limitations on occupancy may have to be governed by external dose limits.

b Air purifying respirators with APF <100 must be equipped with particulate filters that are at least 95 percent efficient. Air purifying respirators with APF = 100 must be equipped with particulate filters that are at least 99 percent efficient. Air purifying respirators with APFs >100 must be equipped with particulate filters that are at least 99.97 percent efficient.

c A licensee may apply to the department for the use of an APF greater than 1 for sorbent cartridges as protection against airborne radioactive gases and vapors, for example, radioiodine.

d A licensee may permit individuals who have not been medically screened or fit tested on the device to use this type of respirator, provided that no credit be taken for their use in estimating intake or dose. It is also recognized that it is difficult to perform an effective positive or negative pressure pre−use user seal check on this type of device. All other respiratory protection program requirements listed in s. HFS 157.27 (3) apply. An assigned protection factor has not been assigned for these

devices. However, an APF equal to 10 may be used if the licensee demonstrates a fit factor of at least 100 by use of a validated or evaluated, qualitative or quantitative fit test.

e Under−chin type only. No distinction is made in this Appendix between elastomeric half−masks with replaceable cartridges and those designed with the filter medium as an integral part of the facepiece, for example, disposable or reusable disposable. Both types are acceptable so long as the seal area of the latter contains some substantial type of seal−enhancing material such as rubber or plastic, the 2 or more suspension straps are adjustable, the filter medium is at least 95 percent efficient and all other requirements of subchapter III of this chapter are met.

f The assigned protection factors for gases and vapors are not applicable to radioactive contaminants that present an absorption or submersion hazard. For tritium oxide vapor, approximately one−third of the intake occurs by absorption through the skin so that an overall protection factor of 3 is appropriate when atmosphere−supplying respirators are used to protect against tritium oxide. Exposure to radioactive noble gases is not considered a significant respiratory hazard, and protective actions for these contaminants should be based on external submersion dose considerations.

g No National Institute of Occupational Safety and Health approval schedule is currently available for atmosphere supplying suits. This equipment may be used in an acceptable respiratory protection program as long as all the other minimum program requirements, with the exception of fit testing, are met.

Note: See s. HFS 157.27 (3).

h A licensee should implement institutional controls to assure that these devices are not used in areas immediately dangerous to life or health.

i This type of respirator may be used as an emergency device in unknown concentrations for protection against inhalation hazards. External radiation hazards and other limitations to permitted exposure such as skin absorption shall be taken into account in these circumstances. This device may not be used by any individual who experiences perceptible outward leakage of breathing gas while wearing the device.