Hyatt considered a half-mask to be less stable on the face than a full facepiece. SARs with hoods or helmets operated in continuous flow mode received an APF of 2,000, consistent with the APF Hyatt gave to full facepiece SARs operating in the continuous flow or pressure demand mode.

The 1980 ANSI standard differentiated APFs for some SARs depending on the type of fit testing performed. Accordingly, half-mask and full facepiece SARs used in the demand mode received APFs of 10 and 100, respectively, when qualitatively fit tested. When tested quantitatively, the APFs for these respirators were the protection factors achieved during fit testing, with the APF limited to the sub-IDLH value [10] of the hazardous substance in the workplace.

Half-mask or full facepiece SARs that functioned in continuous flow or pressure demand modes required no fit testing because of their positive pressure operation; consequently, these respirators received an APF limited only to the sub-IDLH value of the hazardous substance in the workplace when used without an auxiliary air supply or escape bottle (*i.e.*, the ''escape configuration''). When equipped in an escape configuration, these respirators had a maximum APF of 10,000. Continuous flow or pressure demand SARs with hoods or helmets also received a maximum APF of 10,000 when not used in an escape configuration; however, when operated in a escape configuration, the maximum APF for these respirators was of 10,000+ (*i.e.*, employees could use them to escape from IDLH atmospheres).

The 1987 NIOSH RDL recommended APFs of 10, 50, and 1,000, respectively, for half-mask SARs when operated in demand, continuous flow, and positive pressure (including pressure demand) modes. All SARs with hoods or helmets received an APF of 25 when used in the continuous-flow mode. The RDL assigned full facepiece SARs an APF of 50 when they functioned in the demand or continuous flow mode, an APF of 2,000 when operated in the pressure demand or other positive pressure mode, and a maximum APF of 10,000 when used in the pressure demand mode with an auxiliary SCBA.

The 1992 ANSI standard did not set different APFs for the same class of respirator based on the type of fit testing conducted because WPF studies performed after publication of the 1980 ANSI standard did not support this practice. After comparing the operational characteristics of half-mask and full facepiece SARs to half-mask and full facepiece air-purifying respirators, the 1992 ANSI standard gave APFs of 10 and 100, respectively, to half-mask and full facepiece SARs when operated in the demand mode. Pressure demand and continuous flow half-mask SARs received an APF of 50, consistent with their operational similarities with half-mask PAPRs. Full facepiece continuous flow SARs received an APF of 1,000, determined from their operational analogy to SARs having tight-fitting hoods or helmets. Based on their operational similarities to loose-fitting continuous flow PAPRs, the committee drafting the 1992 ANSI standard gave loose-fitting facepiece SARs operated in the continuous flow mode an APF of 25.

The following table summarizes the APFs given to the various classes of SARs (*i.e.*, half-mask, full facepiece, tight-fitting with hoods or helmets, and loose-fitting facepiece), beginning with Hyatt's studies at LLNL in 1976 through the 1992 ANSI standard.

SARs	APFs			
	LANL (1976)	1980 ANSI standard	NIOSH RDL (1987)	1992 ANSI standard
Half-mask	10 (demand)	10 (demand; with QLFT).	10 (demand)	10 (demand).
	1,000 (continuous flow)	Same as QNFT factor (demand; sub-IDLH value max.).	50 (continuous flow)	50 (continuous flow).
	1,000 (pressure demand)	Sub-IDLH (continuous flow or pressure demand; no escape configuration). 10,000 max. (with escape configuration).	1,000 (pressure demand)	50 (pressure demand).
Full facepiece	50 (demand)	100 (demand; with QLFT).	50 (demand)	100 (demand).
	2,000 (continuous flow)	Same as QNFT factor (demand; sub-IDLH value max.).	50 (continuous flow)	1,000 (continuous flow).
	2,000 (pressure demand)	Sub-IDLH (continuous flow or pressure demand; no escape configuration). 10,000 max. (with escape configuration).	2,000 (pressure demand)	1,000 (pressure demand).
Hood or helmet	2,000 (continuous flow)	Sub-IDLH (continuous flow or pressure demand; no escape configuration). 10,000 max. (with escape configuration).	25 (continuous flow)	1,000 (continuous flow).
Loose-fitting facepiece			25 (continuous flow)	25 (continuous flow).

[10] The concentration of the hazardous substance just below its IDLH value.