POF021: General platform presentation

Service Life Assessment by Measuring Residual Capacity

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Abstract:
NIOSH (USA) has expressed a desire to increase the prevalence of End of Service Life Indicators (ESLI) offered with respirators, the goal being to inform a respirator user to change cartridges safely before any contaminant breakthrough. Due to the substantial technical difficulties of ESLI development, few new ESLIs have appeared. As the greater goal is to improve the accuracy of Respirator Cartridge Change Schedules, a more realistic approach to the same goal would be to provide improved field methods to verify Change Schedules.
Lab studies have shown that residual capacity measurements on a series of like respirator cartridges exposed to varying fractions of the proposed service life can be the most cost-effective method of verifying a Cartridge Change Schedule. An even more cost-effective method would be to provide a portable instrument to respirator users able to measure residual capacity of used cartridges in the field. Studies to date, which we plan to present, suggest either approach is feasible. Associated cost estimates can assist respirator users in determining the efficiency of these methods.