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Manning, Diane M.

From: Bruce D. Reinert
To: DMM2
Subject: Input to 42 CFR Part 84
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Revisions to current NIOSH procedures for certifying respiratory protective devices should allow more flexibility in design. In particular, SCBA certification currently requires that the device use a facepiece or mouthpiece. There are devices in use that do not use a facepiece or mouthpiece but have been used successfully for many years.

The NASA liquid-air, self-contained breathing system used at the Kennedy Space Center has been operational since the early 1960s in over 240,000 donnings without any serious problems. The system is self-contained but does not have a facepiece or mouthpiece. A totally encapsulating suit provides the barrier between the individual's respiratory system and the contaminated environment i.e., the respiratory inlet covering. Liquid air is used for both breathing and cooling and the system operates for approximately 120 minutes at a constant flow. The liquid-air system is used for protection against rocket propellants and oxidizers such as hydrazine, unsymmetrical dimethyl hydrazine and nitrogen tetroxide.

Los Alamos is currently developing, for the Department of Energy (DOE), a system similar to the NASA system to be used at DOE sites for decontamination and decommissioning. This system will also use a suit as the respiratory inlet covering. We have an industrial partner in this endeavor and DOE has asked that the system be submitted to NIOSH for testing and certification so that the industrial partner can market the device.

With more emphasis in the United States on cleanup of old chemical waste sites the need for systems like the NASA one becomes evident. NIOSH should modify 42 CFR Part 84 to allow systems such as NASA's that use a full suit as the respiratory inlet covering and other innovative designs to be certified as SCBAs.

Bruce D. Reinert
Los Alamos National Laboratory
MS K553
Los Alamos, NM 87545

Phone: (505) 667-5775
FAX: (505) 665-3689
E mail: reinertb@lanl.gov