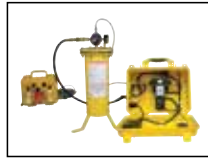# RESPIRATORY RESOURCE

Bullard®

Personal CO Monitors vs. Centralized CO Monitoring

Regulatory Implications:
Does a personal CO monitor (such as the one below) mounted inside a blast respirator meet OSHA requirements?

Regulations:
29 CFR 1910.134 is the OSHA standard for respiratory protection.
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=12716&p_table=standards

1910.134(i)(7) For oil-lubricated compressors, the employer shall use a high-temperature or carbon monoxide alarm, or both, to monitor carbon monoxide levels. If only high-temperature alarms are used, the air supply shall be monitored at intervals sufficient to prevent carbon monoxide in the breathing air from exceeding 10 ppm.

The language of the OSHA standard is clear that a high-temperature or carbon monoxide alarm must be used with an oil-lubricated compressor. However, it does not specify the type of alarm.

1910.134(i)(1)(ii) Compressed breathing air shall meet at least the requirements for Grade D breathing air described in ANSI/Compressed Gas Association Commodity Specification for Air, G-7.1-1989, to include:

- Oxygen content (v/v) of 19.5-23.5%;
- Hydrocarbon (condensed) content of 5 milligrams per cubic meter of air or less;
- Carbon monoxide (CO) content of 10 ppm or less;
- Carbon dioxide content of 1,000 ppm or less; and
- Lack of noticeable odor.

A personal monitor does not provide any filtration to help meet the other Grade D requirements of compressed breathing air outlined above. Bullard Clean Air Box Systems and 41 Series with COHP systems help meet all the Grade D requirements.

Is the Clemco CMS3 NIOSH Approved?
The CMS3 is on the NIOSH approval label for the Clemco blast helmet. NIOSH has explained that the approval indicates the monitor did not negatively affect the respirator performance when in the helmet. The NIOSH approval is not an approval of the CMS3 as a CO monitor or an indication of its performance capabilities.

Practical Implications:

How many workers are on the job site?
- The more workers on the site the less cost effective and more of an administrative burden the personal monitors become.
  - Every monitor must be calibrated.
  - Every monitor has a sensor that will ultimately need to be replaced.
  - Every monitor has a battery that will have to be replaced/recharged.
- With centralized monitoring, such as from a CAB or COHP, only one monitor needs to be calibrated and maintained.

Is there a need for a remote alarm?
- Many job sites have sound levels nearing 120 dB. Remote alarms can signal someone in the supervisor's office of an alarm condition when it is too loud for the operator in the work area to hear, with a personal monitor this is not an option.

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