Mine Safety and Health Admin., Labor

§ 74.8 Measurement, accuracy, and reliability requirements.

(a) Breathing zone measurement requirement. The CPDM shall be capable of measuring respirable dust within the personal breathing zone of the miner whose exposure is being monitored.

(b) Accuracy. The ability of a CPDM to determine the true concentration of respirable coal mine dust at the end of a shift shall be established through testing that demonstrates the following:

(1) For full-shift measurements of 8 hours or more, a 95 percent confidence that the recorded measurements are within ±25 percent of the true respirable dust concentration, as determined by CMDPSU reference measurements, over a concentration range from 0.2 to 4.0 mg/m³; and

(2) For intra-shift measurements of less than 8 hours, a 95 percent confidence that the recorded measurements are within ±25 percent of the true respirable dust concentration, as determined by CMDPSU reference measurements, over the concentration range equivalent to 0.2 to 4.0 mg/m³ for an 8-hour period.1

(c) Reliability of measurements. The CPDM shall meet the accuracy requirements under paragraph (b) of this section, regardless of the variation in density, composition, size distribution of respirable coal mine dust particles, and the presence of water spray mist in coal mines.

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1The equivalent dust concentration range to the 8-hour range of 0.2 – 4 mg/m³ is calculated by multiplying this 8-hour range by the dividend of eight hours divided by the duration of the intrashift measurement specified in units of hours. For example, for a measurement taken at exactly one hour into the shift, the 8-hour equivalent dust concentration range would be a one-hour average concentration range of: 8 hours/1 hour (0.2 – 4 mg/m³) = 1.6 – 32 mg/m³; for a two-hour measurement, the applicable concentration range would be calculated as: 8 hours/2 hours (0.2 – 4 mg/m³) = 0.8 – 16 mg/m³; for a 4-hours measurement, the equivalent range would be: 0.4 – 8 mg/m³; etc. A CPDM must perform accurately, as specified, for intrashift measurements within such equivalent concentration ranges.
§ 74.9 Quality assurance.

(a) General requirements. The applicant shall establish and maintain a quality control system that assures that CPDM devices produced under the applicant’s certificate of approval meet the required specifications and are reliable, safe, effective, and otherwise suitable for their intended use. To establish and to maintain an approval under this part, the applicant shall:

(1) Submit a copy of the most recent registration under ISO Q9001–2000, American National Standard, Quality Management Systems-Requirements, published by ISO:

(i) With the application for approval under § 74.13 of this part; and

(ii) Upon request by NIOSH, subsequent to the approval of a CPDM under this part.

(2) Persons must proceed in accordance with ISO Q9001–2000, American National Standard, Quality Management Systems-Requirements. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Persons may obtain a copy from the International Organization for Standardization at the address provided below.


(3) Persons may inspect a copy at MSHA, Office of Standards, Regulations, and Variances, 1100 Wilson Boulevard, Room 2350, Arlington, Virginia 22209–3939, (202) 693–9440, or at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202–741–6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) Quality management audits. Upon request, applicants or approval holders must allow NIOSH to inspect the quality management procedures and