a trolley-tap type, and the fuse holder shall remain intact and shall readily accept and retain a replacement fuse.

PART 29—PORTABLE COAL DUST/ROCK DUST ANALYZERS, AND CONTINUOUS DUTY, WARNING LIGHT, PORTABLE METHANE DETECTORS FOR USE IN COAL MINES

Subpart A—General Provisions

Sec.

Subpart B—Application for Approval

Subpart C [Reserved]

Subpart D—Approval and Disapproval

Subpart E—Quality Control

Subpart F—General Construction and Performance Requirements

Subpart G—Portable Coal Dust/Rock Dust Analyzers; Performance and Testing Requirements

Subpart H—Continuous Duty, Warning Light, Portable Methane Detectors; Performance and Testing Requirements

AUTHORITY: 30 U.S.C. 957, 961.

SOURCE: 37 FR 7565, Apr. 15, 1972, unless otherwise noted.

Subpart A—General Provisions

§ 29.1 Purpose.

The purpose of the regulations contained in this Part 29 is: (a) To establish procedures and prescribe requirements which must be met in filing applications for the approval of portable coal dust/rock dust analyzers for use in measuring the incombustible content of mine dusts, and the approval of continuous duty, warning light, portable methane detectors for use in providing a visual signal of the presence of a methane-air mixture having a methane

concentration of 1.0 percent ±0.2 percent, or the approval of changes and modifications of approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors; (b) to specify minimum performance requirements and to prescribe methods to be employed in conducting inspections, examinations, and tests to determine the effectiveness of these instruments; and (c) to provide for the issuance of certificates of approval or modifications of certificates of approval for portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have met the minimum requirements for performance set forth in this part.

§ 29.2 Approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors.

On and after the effective date of this part, portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be considered to be approved for use in coal mines where such instruments are: (a) The same in all respects as those portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have been approved as meeting the minimum requirements for performance prescribed in this Part 29; and (b) maintained in an approved condition.

§ 29.3 Use and maintenance of approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors.

Approved portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be operated and maintained in accordance with the specifications prescribed by the manufacturer of such instruments, and in accordance with the applicable provisions of Parts 75 and 77, Subchapter O of this chapter.

§ 29.4 Definitions.

As used in this part—

(a) *Applicant* means an individual, partnership, company, corporation, association, or other organization that designs, manufactures, assembles, or fabricates, or controls the design, manufacture, assembly, or fabrication of a portable coal dust/rock dust analyzer or a continuous duty, warning light, portable methane detector, and who seeks to obtain a certificate of approval for such analyzer or detector.

(b) *Approval* means a certificate or formal document issued by MSHA stating that an individual portable coal dust/rock dust analyzer or an individual continuous duty, warning light, portable methane detector has met the applicable minimum requirements of this Part 29, and that the applicant is authorized to use and attach an approval label or plate on any portable coal dust/rock dust analyzer or continuous duty, warning light, portable methane detector manufactured, fabricated, or assembled in conformance with the plans and specifications upon which the approval was based, as evidence of such approval.

(c) *Approved* means conforming to the minimum requirements of this Part 29.

(d) *Bureau* means the U.S. Bureau of Mines, Department of the Interior.

(e) *Coal dust* means particles of coal that can pass a No. 20 sieve.

(f) *Coal Mine* means an area of land and all structures, facilities, machinery, tools, equipment, shafts, slopes, tunnels, excavations, and other property, real or personal, placed upon, under, or above the surface of such land by any person, used in, or to be used in, or resulting from, the work of extracting in such area bituminous coal, lignite, or anthracite from its natural deposits in the earth by any means or method, and the work of preparing the coal so extracted, and includes custom coal preparation facilities.

(g) *Coal mine dust* means solid particles with sizes ranging from submicroscopic to microscopic, including but not limited to coal dust and rock dust.

(h) *Continuous duty, warning light, portable methane detector* means a portable, self-contained instrument, containing a red warning light which flashes in the presence of methane-air mixtures having methane concentrations of 1.0 percent ±0.2 percent.

(i) *Portable coal dust/rock dust analyzer* means a portable, self-contained instrument, capable of indicating the incombustible content of coal mine dust over a range of from 50 percent to 100 percent incombustible.

(j) *Rock dust* means pulverized limestone, dolomite, gypsum, anhydrite, shale, adobe, or other inert material, preferably light colored, 100 per centum of which will pass through a sieve having 20 meshes per linear inch and 70 per centum or more of which will pass through a sieve having 200 meshes per linear inch; the particles of which when wetted and dried will not cohere to form a cake which will not be dispersed into separate particles by a light blast of air; and which does not contain more than 5 per centum of combustible matter or more than a total of 4 per centum of free and combined silica (SiO_2),or, where the Secretary finds that such silica concentrations are not available, which does not contain more than 5 per centum of free and combined silica.

(k) *Work of preparing the coal* means the breaking, crushing, sizing, cleaning, washing, drying, mixing, storing, and loading of bituminous coal, lignite, or anthracite, and such other work of preparing such coal as is usually done by the operator of the coal mine.

(l) *MESA* means the United States Department of the Interior, Mining Enforcement and Safety Administration. Predecessor organization to MSHA, prior to March 9, 1978.

(m) *MSHA* means the United States Department of Labor, Mine Safety, and Health Administration.

[37 FR 7565, Apr. 15, 1972, as amended at 39 FR 24003, June 28, 1974; 43 FR 12316, Mar. 24, 1978]

Subpart B—Application for Approval

§ 29.10 Application procedures.

(a) Inspection, examination, and testing leading to the approval of portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be undertaken by MSHA only pursuant to written applications which meet the minimum requirements set forth in this Subpart B.

(b) Applications shall be submitted in duplicate to Approval and Certification Center, Box 201 B Industrial Park Road, Dallas Pike, Triadelphia, W. Va. 20659 and shall be accompanied by a check, bank draft, or money order in the amount specified in Subpart C of this part payable to the order of the U.S. Mine Safety and Health Administration.

(c) Except as provided in §§ 29.54, 29.61(e), and 29.76(b), the examination, inspection, and testing of all portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors shall be conducted at Approval and Certification Center, Box 201 B Industrial Park Road, Dallas Pike, Triadelphia, W.Va. 26059.

(d) Applicants, manufacturers, or their representatives may visit or communicate with Approval and Certification Center in order to discuss the requirements for approval of any portable coal dust/rock dust analyzer, or continuous duty, warning light, portable methane detector or the proposed designs thereof. No charge shall be made for such consultation and no written report shall be issued by MSHA as a result of such consultation.

[37 FR 7565, Apr. 15, 1972, as amended at 43 FR 12316, 12317, Mar. 24, 1978]

§ 29.11 Contents of application.

(a) Each application for approval shall contain a complete written description, including operating instructions, of the analyzer or detector for which approval is requested together with a set of drawings and specifications (and lists thereof) showing full details of construction of the instrument and of the materials used. Drawings and specifications (and lists thereof) shall be submitted in duplicate.

(b) Drawings shall be titled, numbered, and dated; any revision dates shall be shown on the drawings, and the purpose of each revision being sought shall be shown on the drawing or described on an attachment to the drawing to which it applies.

(c) Each application for approval shall contain a proposed plan for quality control which meets the minimum requirements set forth in Subpart E of this part.

(d) Each application shall contain a statement that the analyzer or detector has been pretested by the applicant as prescribed in §29.54, and shall include the results of such tests.

(e) Each application for approval shall contain a statement that the analyzer or detector and component parts submitted for approval are either (1) prototypes, or (2) made on regular production tooling, with no operation included which will not be incorporated in regular production processing.

(f) Where any form of radioactivity is employed in the analyzer or detector, the applicant shall submit:

(1) Evidence of compliance with all State regulations with respect to radiation and the use of radioactive materials; and

(2) Evidence of compliance with the requirements set forth in Title 10, Code of Federal Regulations.

§29.12 Delivery of analyzers and detectors by applicant; requirements.

(a) Each applicant shall, when an application is filed pursuant to §29.10 deliver at his own expense, four assembled analyzers or detectors, less the radioactive source, to Approval and Certification Center, Box 201 B Industrial Park Road, Dallas Pike, Triadelphia, W. Va. 26059. The radioactive source shall be delivered and inserted in the instrument by the applicant following testing of the electrical components of such instrument.

(b) Analyzers, detectors, and component parts submitted for approval must be made from materials specified in the application.

(c) One completely assembled analyzer or detector approved under the provisions of this part may be retained by MSHA as a laboratory exhibit; the remaining instruments will be returned to the applicant at his own expense, upon written request within 30 days after notice of approval. If no such request is made, the instruments will be disposed of by MSHA in such manner as it deems appropriate.

(d) Where an analyzer or detector fails to meet the requirements for approval set forth in this part, all instruments and components delivered intact in accordance with this section will be returned to the applicant at his own expense, upon written request within 30 days after notice of disapproval. If no such request is made, the instruments will be disposed of by MSHA in such manner as it deems appropriate.

[37 FR 7565, Apr. 15, 1972, as amended at 43 FR 12316, Mar. 24, 1978]

Subpart C [Reserved]

Subpart D—Approval and Disapproval

§29.30 Certificates of approval; scope of approval.

(a) MSHA shall issue certificates of approval pursuant to the provisions of this subpart only for individual, completely assembled portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have been examined, inspected, and tested, and which meet the minimum requirements set forth in Subparts G and H, as applicable.

(b) MSHA shall not issue an informal notice of approval. However, if the application for approval, submitted in accordance with §29.11, states that the submitted analyzer, detector, and component parts are only prototypes, MSHA will examine, inspect, and test such prototype analyzer, detector, and component parts in accordance with the provisions of this Part 29. If, upon completion of such examinations, inspections and tests, it is found that the prototype meets the minimum requirements set forth in this part, MSHA may inform the applicant, in writing, of the results of the examinations, inspections, and tests, and may require him to resubmit analyzers, detectors, and component parts, as applicable, made on regular production tooling, with no operations included which will not be incorporated in regular production processing, for further examination, inspection, and testing, prior to issuance of the certificate of approval.

(c) Applicants required to resubmit analyzers, detectors, and component parts made on regular production tooling, with no operation included which

will not be incorporated in regular production processing, shall be charged fees.

[37 FR 7565, Apr. 15, 1972, as amended at 52 FR 17515, May 8, 1987]

§ 29.31 Certificates of approval; contents.

(a) The certificate of approval shall contain a description of the analyzer or detector for which it is issued as provided in this part.

(b) The certificate of approval shall specifically set forth any restrictions or limitations, if any, on use of the instrument.

(c) Each certificate of approval shall be accompanied by the drawings and specifications (and lists thereof) submitted by the applicant in accordance with § 29.11. These drawings and specifications shall be incorporated by reference in the certificate of approval and shall be maintained by the applicant. The drawings and specifications listed in each certificate of approval shall set forth in detail the design and construction requirements which shall be met by the applicant during commercial production of the instrument.

(d) Each certificate of approval, shall be accompanied by a reproduction of the approval label design to be employed by the applicant with each approved instrument as provided in § 29.33.

(e) No test data or specific laboratory findings will accompany any certificate of approval, however, MSHA will release pertinent test data and specific findings upon written request by the applicant, or when required by statute or regulation.

(f) Each certificate of approval shall also contain the approved quality control plan as specified in § 29.42.

§ 29.32 Notice of disapproval.

(a) If, upon the completion of the examinations, inspections, and tests required to be conducted in accordance with the provisions of this part, it is found that the analyzer or detector does not meet the minimum requirements set forth in this part, MSHA shall issue a written notice of disapproval to the applicant.

(b) Each notice of disapproval shall be accompanied by all pertinent data or findings with respect to the defects of the instrument for which approval was sought with a view to the possible correction of any such defects.

(c) MSHA shall not disclose, except to the applicant upon written request or when required by statute or regulation, any data, findings or other information with respect to any instrument for which a notice of disapproval is issued.

§ 29.33 Approval labels and markings; approval of contents; use.

(a) Upon receipt of a certificate of approval, the applicant shall submit to MSHA, for approval of contents, samples or full-scale reproductions of approval plates, labels, and markings and a sketch or description of the method of application and position on the instrument, together with instructions for the use and maintenance of the instrument.

(b) Approval labels shall bear the emblem of the Mine Safety and Health Administration, the applicant's name and address, the restrictions or limitations placed upon the use of the instrument by MSHA, an approval number assigned by MSHA, and other information necessary for identification of the instrument.

(c) MSHA shall, where necessary, notify the applicant when additional labels, markings or instructions will be required.

(d) Approval labels and markings shall only be used by the applicant to whom they were issued.

(e) Legible reproductions or abbreviated forms of the label approved by MSHA for use on each analyzer and detector shall be affixed, attached to, or printed on the instrument at a location where it can be easily seen.

(f) The use of any MSHA approval label obligates the applicant to whom it is issued to maintain or cause to be maintained the approved quality control sampling schedule and the acceptable quality level for each characteristic tested, and to guarantee that the instrument is manufactured according to the drawings and specifications upon which the certificate of approval is based.

(g) Each analyzer and detector shall be labeled distinctly to show the name

of the applicant, and the name and letters or numbers by which the instrument is designated for trade purposes, and the serial number or approximate date of manufacture.

[37 FR 7565, Apr. 15, 1972, as amended at 43 FR 12316, Mar. 24, 1978]

§ 29.34 Revocation of certificates of approval.

MSHA reserves the right to revoke, for cause, any certificate of approval issued pursuant to the provisions of this part. Such causes include, but are not limited to, misuse of approval labels and markings, misleading advertising, violations of section 109(e) of the Federal Coal Mine Health and Safety Act of 1969 (30 U.S.C. 819(e)), and failure to maintain or cause to be maintained the quality control requirements of the certificate of approval.

§ 29.35 Changes or modification of approved analyzers and detectors; issuance of modification of certificate of approval.

(a) Each applicant may, if he desires to change any feature of an approved analyzer or detector, request a modification of the original certificate of approval issued by MSHA for such instrument by filing an application for such modification in accordance with the provisions of this section.

(b) Applications shall be submitted as for an original certificate of approval, with a request for a modification of the existing certificate to cover any proposed change.

(c) The application shall be accompanied by appropriate drawings and specifications, and by a proposed quality control plan which meets the requirements of Subpart E of this part.

(d) The application for modification, together with the accompanying material, shall be examined by MSHA to determine whether testing will be required.

(e) If the proposed change or modification meets the requirements of this part, a formal certificate of modification will be issued, accompanied, where necessary, by a list of new and revised drawings and specifications covering the change(s) and reproductions of revised approval labels.

[37 FR 7565, Apr. 15, 1972, as amended at 52 FR 17515, May 8, 1987]

§ 29.36 Delivery of changed or modified approved analyzer or detector.

An approved analyzer or detector for which a formal certificate of modification has been issued shall be delivered by the applicant to Approval and Certification Center, Box 201 B Industrial Park Road, Dallas Pike, Triadelphia, W. Va. 26059, as soon as it is commercially produced.

[37 FR 7565, Apr. 15, 1972, as amended at 43 FR 12316, Mar. 24, 1978]

Subpart E—Quality Control

§ 29.40 Quality control plans; filing requirements.

As a part of each application for approval or modification of approval submitted pursuant to this part, each applicant shall file with MSHA a proposed quality control plan which shall be designed to assure the quality of the instrument for which approval is sought.

§ 29.41 Quality control plans; contents.

(a) Each quality control plan shall contain provisions for the management of quality, including: (1) Requirements for the production of quality data and the use of quality control records; (2) control of engineering drawings, documentations, and changes; (3) control and calibration of measuring and test equipment; (4) control of purchased material to include incoming inspection; (5) lot identification, control of processes, manufacturing, fabrication, and assembly work conducted in the applicant's plant; (6) audit or final inspection of the completed product; and (7) the organizational structure necessary to carry out these provisions.

(b) Each provision for final inspection in the quality control plan shall include a procedure for the selection of a sample of the end product and the functional components thereof for testing, in accordance with procedures set forth in Military Standard MIL–STD–105D, ''Sampling Procedures and Tables

for Inspection by Attributes,'' or Military Standard MIL–STD–414, ''Sampling Procedures and Tables for Inspection by Variables for Percent Defective,'' or an approved equivalent sampling procedure, or an approved combination of sampling procedures. Military Standard MIL–STD–105D, ''Sampling Procedures and Tables for Inspection by Attributes,'' and Military Standard MIL–STD–414, ''Sampling Procedures and Tables for Inspection by Variables for Percent Defective'' are hereby incorporated by reference and made a part hereof. These documents are available for examination at Approval and Certification Center, Box 201 B Industrial Park Road, Dallas Pike, Triadelphia, W. Va. 26059 and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

(c) The sampling procedure shall include a list of the characteristics to be tested by the applicant or his agent.

(d) The characteristics listed in accordance with paragraph (c) of this section shall be classified according to the potential effect of such defect and grouped in to the following classes:

(1) *Critical.* A defect that judgment and experience indicate is likely to result in hazardous or unsafe conditions for individuals using, maintaining, or depending upon the product; or a defect that judgment and experience indicate is likely to prevent performance of the function of the end product.

(2) *Major.* A defect, other than critical that is likely to result in failure, or to reduce materially the usability of the unit or product for its intended purpose.

(3) *Minor.* A defect that is not likely to materially reduce the utility of the instrument for its intended purpose, or a defect that is a departure from established standards and has little bearing on the effective use or operation of the instrument.

(e) The quality control inspection test method to be used by the applicant or his agent for each characteristic required to be tested shall be described in detail.

(f) Each item manufactured shall be 100 percent inspected for defects in all critical characteristics and all defective items shall be rejected.

(g) The Acceptable Quality Level (AQL) for each major or minor defect so classified by the applicant shall be:

(1) Major—1.0 percent;

(2) Minor—4.0 percent.

(h) Except as provided in paragraph (i) of this section, inspection level II as described in MIL–STD–105D, or inspection level IV as described in MIL–STD–414, shall be used for major and minor characteristics and 100 percent inspection for critical characteristics.

(i) Subject to the approval of MSHA, where the quality control plan provisions for raw material, processes, manufacturing, and fabrication inspection are adequate to ensure control of finished article quality, destructive testing may be conducted at a lower level of inspection than that specified in paragraph (h) of this section.

[37 FR 7565, Apr. 15, 1972, as amended at 43 FR 12316, Mar. 24, 1978]

§ 29.42 Proposed quality control plans; approval by MSHA.

(a) Each proposed quality control plan submitted in accordance with this subpart shall be reviewed by MSHA to determine its effectiveness in ensuring the utility of the instrument for which an approval is sought.

(b) If MSHA determines that the proposed quality control plan submitted by the applicant will not insure adequate quality control, MSHA shall require the applicant to modify the procedures and testing requirements of the plan prior to approval of the plan and issuance of any certificate of approval.

(c) Approved quality control plans shall constitute a part of and be incorporated into any certificate of approval issued by MSHA, and compliance with such plans by the applicant shall be a condition of approval.

§ 29.43 Quality control records; review by MSHA; revocation of approval.

(a) The applicant shall keep quality control inspection records sufficient to carry out the procedures required in MIL–STD–105D or MIL–STD–414, or an approved equivalent sampling procedure.

(b) MSHA reserves the right to have its representatives inspect the applicant's quality control test methods, equipment, and records, and to interview any employee or agent of the applicant in regard to quality control test methods, equipment, and records.

(c) MSHA reserves the right to revoke, or cause, any certificate of approval where it finds that the applicant's quality control test methods, equipment, or records do not ensure effective quality control over the instrument for which the approval was issued.

Subpart F—General Construction and Performance Requirements

§ 29.50 Construction and performance requirements; general.

(a) MSHA shall issue approvals for portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors which have met the applicable minimum requirements set forth in this Part 29.

(b) In addition to the types of analyzers and detectors described in Subparts G and H of this part, MSHA will issue approvals for other portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors subject to such additional requirements as may be imposed in accordance with § 29.53.

§ 29.51 General construction requirements.

Portable coal dust/rock dust analyzers and continuous duty, warning light, portable methane detectors will not be accepted by MSHA for examination, inspection, and testing unless they are designed on sound engineering and scientific principles, constructed of suitable materials, and evidence good workmanship.

§ 29.52 Component parts; minimum requirements.

(a) The components of each instrument approved by MSHA for use where permissibility is required shall meet the requirements for permissibility and intrinsic safety set forth in Part 18, Subchapter D of this chapter (Bureau of Mines Schedule 2G).

(b) The components of each instrument shall be:

(1) Designed and constructed to prevent creation of any hazard to the user; and

(2) Assembled to permit easy access for inspection, cleaning, and repair of functional parts.

(c) Replacements parts shall be constructed to maintain the effectiveness of the instrument.

§ 29.53 Test requirements; general.

(a) Each instrument and its components shall, when tested by the applicant and MSHA, meet the applicable performance and test requirements set forth in Subparts G and H of this part.

(b) In addition to the minimum requirements set forth in Subparts G and H of this part MSHA reserves the right to require, as a further condition of approval, any additional or other minimum requirements it deems necessary to establish the quality effectiveness, and safety of any instrument.

(c) Where it is determined after receipt of an application that additional or other minimum requirements will be required for approval, MSHA will notify the applicant in writing of the additional or other minimum requirements, and necessary examinations, inspections, and tests, stating generally its reasons for such requirements, examinations, inspections or tests.

§ 29.54 Pretesting by applicant.

(a) Prior to any application for approval or modification of approval, the applicant shall conduct, or cause to be conducted, examinations, inspections, and tests of analyzer or detector performance which are equal to or exceed the severity of those prescribed in this part.

(b) With the application, the applicant shall provide a statement to MSHA showing the types and results of the examinations, inspections, and tests performed as required under paragraph (a) of this section and state that the analyzer or detector meets the minimum requirements of Subpart G or H of this part, as applicable. Complete examination, inspection and test data shall be retained on file by the applicant and be submitted, upon request, to MSHA.

(c) MSHA may, upon written request by the applicant, provide drawings and descriptions of its test equipment and otherwise assist the applicant in establishing a test laboratory or securing the services of a testing agency.

§ 29.55 Conduct of examinations, inspections, and tests by MSHA; assistance by applicants; observers; recorded data; public demonstrations.

(a) All examinations, inspections, and tests conducted by MSHA pursuant to Subparts G and H of this part will be under the direction and control of MSHA.

(b) MSHA may as a condition of approval, require the assistance of the applicant or agents of the applicant during the assembly, disassembly, or preparation of any instrument or instrument component prior to testing or in the operation of such instrument during testing.

(c) Necessary government personnel, persons assisting MSHA pursuant to paragraph (b) of this section, and such other persons as are requested by MSHA or the applicant to be observers, shall be present during any examination, inspection or test conducted prior to the issuance of an approval by MSHA for the instrument under consideration.

(d) MSHA shall hold as confidential any analyses, drawings, specifications, or materials submitted by the applicant and shall not disclose any principles or patentable features of such equipment, except as required by statute or regulation.

(e) As a condition of each approval issued for any analyzer or detector, MSHA reserves the right, following the issuance of such approval, to conduct such public tests and demonstrations of the approved instrument as it deems appropriate.

[37 FR 7565, Apr. 15, 1972, as amended at 39 FR 24003, June 28, 1974]

§ 29.56 Withdrawal of applications.

Any applicant may, upon a written request submitted to MSHA, withdraw any application for approval of any analyzer or detector.

[37 FR 7565, Apr. 15, 1972, as amended at 52 FR 17515, May 8, 1987]

Subpart G—Portable Coal Dust/Rock Dust Analyzers; Performance and Testing Requirements

§ 29.60 Minimum performance requirements.

(a) Portable coal dust/rock dust analyzers shall be self-contained units, practical in operation, portable, and suitable for service in underground coal mines.

(b) The analyzer shall be equipped with a quantitative indicating device that is capable of indicating the incombustible content of coal mine dusts over the range of from 50 percent to 100 percent incombustible.

(c) Analyzers equipped with batteries shall be constructed so that when such batteries are filled, electrolyte will not spill during use.

(d) Battery containers shall be made of corrosion resistant material.

§ 29.61 Testing requirements.

(a) Portable coal dust/rock dust analyzers shall be tested to ensure that they meet the minimum construction and performance requirements set forth in §§ 29.51, 29.52, and 29.60.

(b) The sampling materials listed in Table A shall be used in testing the capability of the indicating device of the portable coal dust/rock dust analyzer to measure incombustible content as specified in § 29.60(b).

(c) The indicating device of the analyzer being tested shall be within ±3 percent of the chemically determined incombustible content for 80 percent of the standard samples and inspector's samples listed in Table B.

(d) In preparing sampling materials for testing, all sampling materials shall be:

(1) Air equilibrated;

(2) Carefully mixed to minimize segregation or degradation;

(3) Stored in moisture- and air-tight containers to prevent oxidation and drying; and,

(4) Analyzed for percent incombustible content within ±1 percent, by chemical analysis.

(e) In order to determine the reliability and utility of the analyzer, personnel of MSHA shall field test the instrument for 1 month in various underground coal mines, in accordance with the applicant's operating and maintenance instructions.

(f) MSHA may conduct any additional field testing it deems necessary.

TABLE A—SPECIFICATIONS FOR SAMPLING MATERIALS USED FOR COAL DUST/ROCK DUST ANALYZER TESTING (PERCENTAGES BY WEIGHT; PARTICLE SIZE ±2 PERCENT)

1. Bruceton mine coal, Pittsburgh Seam, 6 to 8 percent ash, 100 percent through U.S. No. 100 sieve, 70 percent through U.S. No. 200 sieve.
2. Pocahontas low volatile, 5 to 6 percent ash, less than 0.7 percent total sulfur, 70 percent through U.S. No. 200 sieve.
3. Pittsburgh Seam, run-of-mine, 27 to 32 percent ash, 1.5 to 2.5 percent sulfur, 100 percent through U.S. No. 20 sieve and 20 percent through U.S. No. 200 sieve.
4. Pyrite, coal-derived, 90 percent or better FeS_2, 70 percent through U.S. No. 200 sieve.
5. $MgCO_3$, analytical grade, powdered, 70 percent through U.S. No. 200 sieve.
6. Ash, mineral matter content of 50 to 80 percent from preparation plant refuse, less than 5 percent pyrite, 70 percent through U.S. No. 200 sieve.
7. Limestone, 99 percent $CaCO_3$, 70 percent through U.S. No. 200 sieve.
8. Dolomite, approximately 41 percent $MgCO_3$, 70 percent through U.S. No 200 sieve.
9. Gypsum, approximately 45 percent $CaSO_4 \oplus 2H_2O$, 70 percent through U.S. No. 200 sieve.
10. Traction sand, (Quartz) 100 percent through U.S. No. 20 sieve.
11. Flammable hydraulic oil (petroleum based).

TABLE B—SPECIFICATIONS FOR STANDARD SAMPLES AND INSPECTORS' SAMPLES USED FOR COAL DUST/ROCK DUST ANALYZER TESTING (PERCENTAGES BY WEIGHT WITH ALLOWABLE VARIATIONS OF ±2 PERCENT)

Standard Samples

1. Bruceton coal and limestone to form 55, 65, 75, and 85 percent incombustible (ash and limestone plus 0.3 to 0.6 percent inherent moisture).
2. Bruceton coal and dolomite to 55, 65, 75, and 85 percent incombustibles.
3. Bruceton coal and gypsum to 55, 65, 75, and 85 percent incombustibles.
4. Pocahontas coal and limestone to 55, 65, 75, and 85 percent incombustibles.
5. Pocahontas coal and dolomite to 55, 65, 75, and 85 percent incombustibles.
6. Pittsburgh seam coal and limestone to 55, 65, 75, and 85 percent incombustibles.
7. Pittsburgh seam coal and dolomite to 55, 65, 75, and 85 percent incombustibles.
8. Moisture added to sample 6 of 65 percent incombustibles resulting in 70 percent incombustibles.
9. Moisture added to sample 6 of 55 percent incombustibles resulting in 65 percent total incombustibles.
10. Pyrite added to sample 1 of 55 percent resulting in 56 percent incombustibles.
11. Pyrite added to sample 4 of 65 percent resulting in 66 percent incombustibles.
12. Pyrite added to sample 6 of 75 percent resulting in 76 percent incombustibles.
13. $MgCo_3$ added to sample 1 of 55 percent resulting in 58 percent incombustibles.
14. $MgCo_3$ added to sample 2 of 65 percent resulting in 68 percent incombustibles.
15. $MgCO_3$ added to sample 3 of 70 percent resulting in 78 percent incombustibles.
16. Ash added to sample 6 of 55 percent resulting in 60 percent incombustibles.
17. Ash added to sample 6 of 55 percent resulting in 70 percent incombustibles.
18. A mixture consisting of 30 percent ash, 45 percent Pittsburgh coal, and 25 percent limestone.
19. Sand added to sample 1 of 55 percent resulting in 60 percent incombustibles.
20. Sand added to sample 1 of 55 percent resulting in 65 percent incombustibles.
21. Sand added to sample 1 of 55 percent resulting in 75 percent incombustibles.
22. Hydraulic oil added to sample 1 of 55 percent resulting in 50 percent incombustibles.
23. Hydraulic oil added to sample 1 of 55 percent resulting in 45 percent incombustibles.

INSPECTORS' SAMPLES

1. A group of 25 samples shall be chosen from samples taken by MSHA inspectors during their regular mine surveys of rock dust sufficiency.
2. The type of rock dust and coal present in the mine from which such samples were taken shall be made available for purposes of calibration.
3. Where the quantity of individual samples is insufficient to supply the sample volume required for testing, composite samples of adequate volume will be used.

Subpart H—Continuous Duty, Warning Light, Portable Methane Detectors; Performance and Testing Requirements

§ 29.70 Minimum performance requirements.

(a) Continuous duty, warning light, portable methane detectors shall be self-contained units, practical in operation, portable and suitable for service in underground coal mines.

(b) The detector shall be equipped with an indicating device that contains one or more warning lights designed and constructed to flash in the presence of a methane-air mixture having a methane concentration of 1 percent ±0.2 percent.

(c) Detectors equipped with batteries shall be constructed so that when such batteries are filled, electrolyte will not spill during use.

(d) Battery containers shall be made of corrosion-resistant material.

§ 29.71 Warning light; performance requirements.

(a) Warning lights contained in the indicating devices of detectors shall:

(1) Be visible within the normal visual field of miners working in the vicinity of the detector;

(2) If incandescent, employ lamps of no less than 0.2 candlepower; or

(3) If light-emitting diodes (LED's), have sufficient intensity to be discernible in the working place of an underground coal mine; and,

(4) Be red in color.

(b) The flash rate of the warning light shall be approximately one flash per second, and the duty cycle shall be sufficiently long to attract attention.

§ 29.72 Accessory quantitative meter; minimum requirements.

(a) In addition to the warning lights described in §29.71, an accessory meter may be installed in a continuous duty, warning light, portable methane detector, to serve as a quantitative indicator of the presence of methane.

(b) Where an accessory quantitative meter is installed on a detector, it shall meet the following minimum requirements for performance and accuracy:

(1) Accessory quantitative meters shall indicate the presence of methane concentrations as low as 0.25 percent and shall have upper scale limits of 2 percent to 4 percent methane. The indications for these percentages shall be within the limits of error specified in Table C;

(2) Accessory quantitative meters shall make no less than 30 determinations for the presence of methane without replacement of any component part, and no less than 15 such determinations prior to recharging of the battery or other power source; and,

(3) The scale of accessory quantitative meters shall not be subdivided into smaller divisions than is warranted by the general accuracy of the meter.

§ 29.73 Operative period.

Detectors shall be tested to ensure that they operate effectively over a 10-hour period (a) without requiring battery replacement or recharging, and (b) without loss of initial accuracy.

§ 29.74 Calibration adaptors.

(a) Each detector shall be equipped with an adaptor that checks the overall response of the instrument to a premixed, methane-air mixture, having a concentration of not less than 1 percent or more than 3 percent, by volume.

(b) Adaptors shall be compatible with methane calibrating kits marketed for methane monitor calibration.

§ 29.75 Visual indicator device.

Each detector shall be equipped with a device capable of giving a visual indication of the operative condition of the battery and the electrical circuitry employed in the detector.

§ 29.76 Testing requirements.

(a) Continuous duty, warning light, portable methane detectors shall be tested to ensure that they meet the minimum construction and performance requirements set forth in §§29.51, 29.52, 29.70, 29.71, 29.73, 29.74, and 29.75.

(b) Accessory quantitative meters shall be tested at several percentages within the limits of error specified in Table C, and at temperatures ranging from 50° and 70° F., with 5° increments.

Ten tests shall be made at each percentage selected, and neither the average of the 10 tests, nor more than two tests for each percentage, shall exceed the limits of error specified in Table C.

(c) In order to determine the reliability and utility of the detector, personnel of MSHA shall field test the instrument for 1 month in various underground coal mines, in accordance with the applicant's operating and maintenance instructions.

(d) MSHA may conduct any additional field testing it deems necessary.

TABLE C—MAXIMUM AND MINIMUM LIMITS OF ERROR FOR ACCESSORY QUANTITATIVE METERS INSTALLED ON CONTINUOUS DUTY, WARNING LIGHT, PORTABLE METHANE DETECTORS

Percent methane	Minimum limit of error—percent of methane	Maximum limit of error—percent methane
0.25	0.10	0.40
0.50	0.35	0.65
1.00	0.80	1.20
2.00	1.80	2.20
3.00	2.70	3.30
4.00	3.70	4.30

PART 33—DUST COLLECTORS FOR USE IN CONNECTION WITH ROCK DRILLING IN COAL MINES

Subpart A—General Provisions

Sec.

Subpart B—Dust-Collector Requirements

Subpart C—Test Requirements

AUTHORITY: 30 U.S.C. 957, 961.

SOURCE: Schedule 25B, 25 FR 6473, July 9, 1960, unless otherwise noted.

Subpart A—General Provisions

§ 33.1 Purpose.

The regulations in this part set forth the requirements for dust collectors used in connection with rock drilling in coal mines to procure their certification as permissible for use in coal mines; procedures for applying for such certification; and fees.

§ 33.2 Definitions.

As used in this part:

(a) *Permissible,* as applied to a dust collector, means that it conforms to the requirements of this part, and that a certificate of approval to that effect has been issued.

(b) *Bureau* means the United States Bureau of Mines.

(c) *Certificate of approval* means a formal document issued by MSHA stating that the dust collector unit or combination unit has met the requirements of this part, and authorizing the use and attachment of an official approval plate or a marking so indicating.

(d) *Certificate of performance* means a formal document issued by MSHA stating that a dust-collecting system has met the test requirements of Subpart C of this part and therefore is suitable for use as part of permissible units.

(e) *Dust-collector unit* means a complete assembly of parts comprising apparatus for collecting the dust that results from drilling in rock in coal mines, and is independent of the drilling equipment.

(f) *Combination unit* means a rock-drilling device with an integral dust-