

changes in the design, the manufacturer should first obtain MSHA's approval of the change. The procedure is as follows:

(a)(1) The manufacturer must write to the U.S. Department of Labor, Mine Safety and Health Administration, Approval and Certification Center, 765 Technology Drive, Triadelphia, WV 26059, requesting an extension of the original approval and stating the change or changes desired. With this request, the manufacturer should submit a revised drawing or drawings showing changes in detail, together with one of each of the parts affected.

(2) Where the applicant for approval has used an independent laboratory under part 6 of this chapter to perform, in whole or in part, the necessary testing and evaluation for approval of changes to an approved product under this part, the applicant must provide to MSHA as part of the approval application:

(i) Written evidence of the laboratory's independence and current recognition by a laboratory accrediting organization;

(ii) Complete technical explanation of how the product complies with each requirement in the applicable MSHA product approval requirements;

(iii) Identification of components or features of the product that are critical to the safety of the product; and

(iv) All documentation, including drawings and specifications, as submitted to the independent laboratory by the applicant and as required by this part.

(b) MSHA will consider the application and inspect the drawings and parts to determine whether it will be necessary to make any tests.

(c) If no tests are necessary, the applicant will be advised of the approval or disapproval of the change by letter from MSHA.

(d) If tests are judged necessary, the applicant will be advised of the material that will be required.

[Sched. 8C, Oct. 31, 1935, as amended by Supp. 1, 20 FR 2575, Apr. 19, 1955; 43 FR 12315, Mar. 24, 1978; 52 FR 17514, May 8, 1987; 60 FR 35694, July 11, 1995; 68 FR 36420, June 17, 2003; 73 FR 52212, Sept. 9, 2008]

PART 23—TELEPHONES AND SIGNALING DEVICES

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

Sec. 23.2(f) also issued under 30 U.S.C. 811.

SOURCE: Schedule 9B, 4 FR 1555, Apr. 11, 1939, unless otherwise noted.

§ 23.1 Purpose.

(a) The purpose of investigations under this part is to promote the development of telephones and signaling devices that may be used safely in mines, especially in coal mines that may have gassy or dust-laden atmospheres. This schedule supersedes Schedule 9A, issued under date of December 5, 1922, and becomes effective October 18, 1938.

(b) Telephones and signaling devices approved under the requirements of this part will be termed "permissible" by MSHA, and if actively marketed will be listed as such in publications relating to permissible equipment, for the information of State mine inspection departments, compensation bureaus, mine operators, miners, and others interested in safety equipment for mines.

§ 23.2 Definitions.

(a) *Adequate* means appropriate and sufficient, as determined by mutual agreement of the manufacturer, operators, and MSHA.

(b) *Approval* means official notification by letter, from MSHA to a responsible organization, stating that the device under consideration has been judged to meet the requirements of this part.

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(c) *Normal operation* means the performance by each part of the device of those functions for which the part was designed.

(d) *Permissible* as used in this part means completely assembled and conforming in every respect with the design formally approved by MSHA under this part. (Approvals under this part are given only to equipment for use in gassy and dusty mines.)

(e) *Protected* means effectively covered, enclosed, or otherwise guarded by adequate covers.

(f) *Signaling device*. As used in this part, a signaling device is one that gives visual or audible signals.

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

(h) *MSHA* means the U.S. Department of Labor, Mine Safety and Health Administration.

NOTE: Paragraph (f) of this section is issued under the authority of Sec. 101 of the Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811). All other paragraphs in this section continue under the original authority.

[Sched. 9B, 4 FR 1555, Apr. 11, 1939, as amended by Supp. 1, 20 FR 2975, May 4, 1955; 39 FR 24001, June 28, 1974; 43 FR 12315, Mar. 24, 1978; 47 FR 11370, Mar. 16, 1982]

§ 23.3 Application procedures and requirements.

(a) Before MSHA will undertake an active investigation leading to approval of any telephone or signaling device, the applicant shall make application by letter for an investigation leading to approval of the device. This application shall be sent to: U.S. Department of Labor, Mine Safety and Health Administration, Approval and Certification Center, 765 Technology Drive, Triadelphia, WV 26059, together with the required drawings, one complete telephone or signaling device, and instructions for its operation. Fees calculated in accordance with part 5 of this title shall be submitted in accordance with § 5.40.

(b) Where the applicant for approval has used an independent laboratory under part 6 of this chapter to perform,

in whole or in part, the necessary testing and evaluation for approval under this part, the applicant must provide to MSHA as part of the approval application:

(1) Written evidence of the laboratory's independence and current recognition by a laboratory accrediting organization;

(2) Complete technical explanation of how the product complies with each requirement in the applicable MSHA product approval requirements;

(3) Identification of components or features of the product that are critical to the safety of the product; and

(4) All documentation, including drawings and specifications, as submitted to the independent laboratory by the applicant and as required by this part.

(c) An applicant may request testing and evaluation to non-MSHA product safety standards which have been determined by MSHA to be equivalent, under § 6.20 of this chapter, to MSHA's product approval requirements under this part.

[68 FR 36421, June 17, 2003, as amended at 70 FR 46343, Aug. 9, 2005; 70 FR 48872, Aug. 22, 2005; 73 FR 52212, Sept. 9, 2008]

§ 23.4 [Reserved]

§ 23.5 Conditions governing investigations.

(a) One complete device together with assembly and detail drawings that show its construction and the materials of which the parts are made, shall be submitted preferably at the time the application for test is made. These shall be sent prepaid to: Approval and Certification Center, 765 Technology Drive, Triadelphia, WV 26059.

(b) After the device has been inspected by MSHA, the applicant will be notified as to the amount of material that he will be required to supply for the tests and of the date on which testing will be started.

(c) *Observers at formal investigations and demonstrations*. No one shall be present during any part of the formal investigation conducted by MSHA which leads to approval for permissibility except the necessary Government personnel, representatives of the applicant, and such other persons as

may be mutually agreed upon by the applicant and MSHA. Upon granting approval for permissibility, MSHA will announce that such approval has been granted to the device and may thereafter conduct, from time to time in its discretion, public demonstrations of the tests conducted on the approved device. Those who attend any part of the investigation, or any public demonstration, shall be present solely as observers; the conduct of the investigation and of any public demonstration shall be controlled by MSHA. Results of chemical analyses of material and all information contained in the drawings, specifications, and instructions shall be deemed confidential and their disclosure will be appropriately safeguarded by MSHA.

(d) Formal tests will not be made unless the device has been completely developed and is in a form that can be marketed.

(e) The results of the tests shall be regarded as confidential by all present at the tests and shall not be made public in any way prior to the formal approval of the device by MSHA.

(f) No verbal report of approval or disapproval will be made to the applicant. After MSHA has considered the results of the inspections and tests, a formal written report of the approval or disapproval will be made to the applicant by MSHA. The applicant shall not advertise his device as being permissible or approved, or as having passed the tests, prior to receipt of the formal notice of approval.

[Sched. 9B, 4 FR 1555, Apr. 11, 1939, as amended by Supp. 1, 20 FR 2975, May 4, 1955; 43 FR 12315, Mar. 24, 1978; 73 FR 52212, Sept. 9, 2008]

§ 23.6 General requirements for approval.

Telephones and signaling devices shall be durable in construction, practical in operation, and suitable for conditions of underground service. They shall offer no probable explosion hazard under normal operation if use in gassy or dusty mine atmospheres.

§ 23.7 Specific requirements for approval.

(a) The circuits external to telephones and signal devices shall be intrinsically safe; that is, the electrical

design and construction of telephones and signal devices shall be such that neither contact between wires comprising the external circuits nor contact of tools or other metal objects with external terminals and circuits will result in electrical sparks capable of igniting explosive methane-air mixtures (or such mixtures with coal dust in suspension) during normal operation of the telephones or signal devices.

(b) All parts which, during normal operation, are capable of producing sparks that might ignite explosive methane-air mixtures shall be enclosed in explosion-proof compartments. All openings in the casings of such compartments shall be adequately protected. It is desirable that openings be as few as possible. All joints in the casings of an explosion-proof compartment shall be metal-to-metal so designed as to have a width of contact, measured along the shortest path from the inside to the outside of the compartment, of not less than 1 inch if the unoccupied volume (air space) in the compartment is more than 60 cubic inches. For unoccupied volume of 60 cubic inches or less, a $\frac{3}{8}$ -inch width of contact will be acceptable.

(c) All bolts and screw holes shall be "blind" or bottomed if the omission of a bolt or screw would otherwise leave an opening into the compartment. An adequate lock or seal shall be provided to prevent tampering and exposure of spark-producing parts by unauthorized persons.

(d) Battery cells shall be placed in an explosion-proof compartment or else in one that is locked or sealed, and the terminals and the connections thereto shall be so arranged and protected as to preclude meddling, tampering, or making other electrical connections with them.

(e) Manufacturers shall furnish adequate instructions for the installation and connection of telephones and signal devices in order that the safety of these devices and other circuits shall not be diminished by improper installation. MSHA reserves the right to require the attachment of wiring diagrams to the cases of telephones and signal devices.

(f) If electric light bulbs are used in signaling devices, they shall be either

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equipped with effective safety devices, such as are required for permissible electric mine lamps,¹ or enclosed in explosion-proof compartments.

(g) Line powered telephones and signaling devices or systems shall be equipped with standby power sources that have the capacity to enable the devices or systems to continue functioning in the event the line power fails or is cut off. Manufacturers shall furnish instructions for the proper maintenance of standby power sources.

NOTE: Paragraph (g) of this section is issued under the authority of Sec. 101 of the Federal Mine Safety and Health Act of 1977, Pub. L. 91-173 as amended by Pub. L. 95-164, 91 Stat. 1291 (30 U.S.C. 811). All other paragraphs in this section continue under the original authority.

[Sched. 9B, 4 FR 1555, Apr. 11, 1939, as amended at 47 FR 11370, Mar. 16, 1982]

§ 23.8 Inspection and tests.

(a) A thorough inspection of the telephone or signaling device will be made to determine its adequacy and permissibility. Tests may be made to check the electrical characteristics and constants of the various parts, and determine the adequacy of the insulation and other parts of features of the device.

(b) In addition, compartments of explosion-proof design will be tested while filled and surrounded with explosive mixtures containing varying percentages of Pittsburgh natural gas² and air, the mixture within the compartment being ignited by a spark plug or other suitable means. For some of the tests bituminous-coal dust will be introduced into the compartment in addition to the explosive mixtures, and the effects will be noted. A sufficient number of tests will be made under the foregoing conditions to determine the ability of the compartment to retain flame without bursting. Even though the surrounding mixtures are not ignited, the compartment will not be considered as having passed the tests, if flames are discharged from any joint

¹In this case, the requirements of the current schedule for mine lamps will apply.

²Investigation has shown that for test purposes Pittsburgh natural gas (containing a high percentage of methane) is a satisfactory substitute for pure methane.

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or opening; if excessive pressures are developed or if serious distortion of the compartment walls take place.

§ 23.9 Special requirements for complete devices.

Telephones and signaling devices will be considered nonpermissible if used under any of the followings conditions:

(a) Without the approval plate, mentioned hereafter.

(b) With unprotected openings in any of the explosion-proof compartments. This condition refers to any openings in these compartments, but especially to those equipped with removable covers.

(c) If not complete with all of the parts considered in the approval.

(d) If installed or connected otherwise than in accordance with the instructions furnished by the manufacturer.

(e) If modified in any manner not authorized by MSHA.

§ 23.10 Material required for MSHA records.

In order that MSHA may know exactly what it has tested and approved, it keeps detailed records covering each investigation. These records include drawings and actual equipment as follows:

(a) *Drawings.* The original drawings submitted with the application for the tests and the final drawings which the manufacturer must submit to MSHA before the approval is granted, to show the details of the device as approved. These drawings are used to identify the device in the approval and as a means of checking the future commercial product of the manufacturer.

(b) *Actual equipment.* If MSHA so desires, parts of the devices that are used in the tests will be retained as records of the equipment submitted. If the device is approved, MSHA reserves the right to require the manufacturer to submit one, with the approval plate attached and without cost to MSHA, as a record of his commercial product.

§ 23.11 How approvals are granted.

All approvals are granted by official letter from MSHA. A device will be approved under this part only when the testing engineers have judged that it

has met the requirements of the part and MSHA's records are complete, including drawings from the manufacturer that show the device as it is to be commercially made. Individual parts of devices will not be approved. No verbal reports of the investigation will be given and no informal approvals will be granted. As soon as the manufacturer has received the formal approval, he shall be free to advertise his device as permissible.

[Sched. 9B, 4 FR 1555, Apr. 11, 1939, as amended by Supp. 1, 20 FR 2975, May 4, 1955]

§ 23.12 Wording, purpose, and use of approval plate.

(a) *Approval plate.* (1) Manufacturers shall attach, stamp, or mold an approval plate on each permissible device. The plate shall bear the emblem of the Mine Safety and Health Administration and be inscribed as follows:

Permissible Telephone (or Permissible Signaling Device) Approval No. _____ Issued to the _____ Company.

(2) When deemed necessary, an appropriate caution statement shall be added. The size and position of the approval plate shall be satisfactory to MSHA.

(b) *Purpose.* The approval plate is a label that identifies the device so that anyone can tell at a glance whether or not it is of the permissible type. By the plate, the manufacturer can point out that his device complies with MSHA's requirements and that it has been approved for use in gassy or dusty mines.

(c) *Use.* Permission to place MSHA's approval plate on his device obligates the manufacturer to maintain the quality of his product and to see that each device is constructed according to the drawings that have been accepted by MSHA and are in MSHA's files. Devices exhibiting changes in design that have not been authorized are not permissible and must not bear MSHA's approval plate.

[Sched. 9B, 4 FR 1555, Apr. 11, 1939, as amended at 43 FR 12315, Mar. 24, 1978]

§ 23.13 Withdrawal of approval.

MSHA reserves the right to rescind for cause at any time any approval granted under this part.

§ 23.14 Instructions for handling future changes in design.

All approvals are granted with the understanding that the manufacturer will make his device according to the drawings that he has submitted to MSHA and that have been considered and included in the approval. Therefore, before making any changes in the design he shall obtain MSHA's authorization of the change. The procedure is as follows:

(a)(1) The manufacturer shall write to the U.S. Department of Labor, Mine Safety and Health Administration, Approval and Certification Center, 765 Technology Drive, Triadelphia, WV 26059, requesting an extension of the original approval and stating the change or changes desired. With this request, the manufacturer should submit a revised drawing or drawings showing the changes in detail, together with one of each of the parts affected.

(2) Where the applicant for approval has used an independent laboratory under part 6 of this chapter to perform, in whole or in part, the necessary testing and evaluation for approval of changes to an approved product under this part, the applicant must provide to MSHA as part of the approval application:

(i) Written evidence of the laboratory's independence and current recognition by a laboratory accrediting organization;

(ii) Complete technical explanation of how the product complies with each requirement in the applicable MSHA product approval requirements;

(iii) Identification of components or features of the product that are critical to the safety of the product; and

(iv) All documentation, including drawings and specifications, as submitted to the independent laboratory by the applicant and as required by this part.

(b) MSHA will consider the application and inspect the drawings and parts to determine whether it will be necessary to make any tests.

(c) If no tests are necessary, and the change meets the requirements, the applicant will be officially advised by MSHA that his original approval has been extended to include the change.

(d) If tests are judged necessary, the applicant will be advised of the material that will be required. In this case extension of approval will be granted upon satisfactory completion of the tests and full compliance with the requirements.

[Sched. 9B, 4 FR 1555, Apr. 11, 1939, as amended by Supp. 1, 20 FR 2975, May 4, 1955; 43 FR 12315, Mar. 24, 1978; 52 FR 17514, May 8, 1987; 68 FR 36421, June 17, 2003; 73 FR 52212, Sept. 9, 2008]

PART 27—METHANE-MONITORING SYSTEMS

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

SOURCE: 31 FR 10607, Aug. 9, 1966, unless otherwise noted.

Subpart A—General Provisions

§ 27.1 Purpose.

The regulations in this part set forth the requirements for methane-monitoring systems or components thereof to procure certification for their incorporation in or with permissible equipment that is used in gassy mines, tunnels, or other underground workings and procedures for applying for such certification.

[31 FR 10607, Aug. 9, 1966, as amended at 52 FR 17515, May 8, 1987]

§ 27.2 Definitions.

As used in this part:

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

(b) *Applicant* means an individual, partnership, company, corporation, association, or other organization that designs, manufactures, or assembles and that seeks certification or preliminary testing of a methane-monitoring system or component.

(c) *Methane-monitoring system* means a complete assembly of one or more methane detectors and all other components required for measuring and signalling the presence of methane in the atmosphere of a mine, tunnel, or other underground workings, and shall include a power-shutoff component.

(d) *Methane detector* means a component for a methane-monitoring system that functions in a gassy mine, tunnel, or other underground workings to sample the atmosphere continuously and responds to the presence of methane.

(e) *Power-shutoff component* means a component of a methane-monitoring system, such as a relay, switch, or switching mechanism, that will cause a control circuit to deenergize a machine, equipment, or power circuit when actuated by the methane detector.

(f) *Flammable mixture* means a mixture of a gas, such as methane, natural