(c) The application for modification, together with the examination, inspection, and test results prescribed by §28.10 shall be examined and evaluated by MSHA to determine if the proposed modification meets the requirements of this part.

(d) If the proposed modification meets the requirements of this part, a formal modification of approval will be issued, accompanied, where necessary, by reproductions of revised approval labels or markings.

Subpart D—Quality Control

§ 28.30 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 short-circuit protection provided by the fuse for which approval is sought.

§ 28.31 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) The sampling plan shall include inspection tests and sampling procedures developed in accordance with Military Specification MIL-F-15160D, ''Fuses; Instrument, Power, and Telephone'' (which is hereby incorporated by reference and made a part hereof), Group A tests and Group B tests, except that the continuity and/or resistance characteristics of each fuse shall be tested. Military Specification MIL-F–15160D is available for examination at Approval and Certification Center, RR 1, Box 251, Industrial Park Road, Triadelphia, WV 26059. Copies of the document may be purchased from Information Dissemination (Superintendent of Documents), P.O. Box 371954, Pittsburgh, PA 15250–7954; Telephone: 866–512–1800, *http://bookstore.gpo.gov*.

(c) The sampling procedure shall include a list of the characteristics to be tested by the applicant or his agent and shall include but not be limited to: (1) Continuity and/or resistance determination for each fuse; (2) carry current capability (not less than 110 percent of the rated current); and, (3) overload current interruption capability (not less than 135 percent of the rated current).

(d) 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.

[37 FR 7562, Apr. 15, 1972, as amended at 43 FR 12316, Mar. 24, 1978; 60 FR 35694, July 11, 1995; 71 FR 16666, Apr. 3, 2006]

§ 28.32 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 insuring the quality of short-circuit protection provided by the fuse 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.

§ 28.33 Quality control test methods, equipment, and records; review by MSHA; revocation of approval.

(a) 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.

(b) MSHA reserves the right to revoke, for 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 fuse for which the approval was issued.

Subpart E—Construction, Performance, and Testing Requirements

§ 28.40 Construction and performance requirements; general.

(a) MSHA shall issue approvals for fuses for use with direct current in providing short-circuit protection for trailing cables, when such fuses have met the minimum construction, performance, and testing requirements set forth in this subpart.

(b) Fuses submitted to MSHA for approval will not be accepted unless they are designed on sound engineering and scientific principles, constructed of suitable materials, and evidence good workmanship.

(c) Fuses may be single-element or dual-element in type, however, they shall be capable of interrupting any direct current within a range from the ampere rating of the fuse under consideration for approval up to 20,000 amperes.

(d) MSHA shall accept the fuse size and ampere rating as specified in the Underwriters Laboratories, Inc., standard for alternating current fuses (UL–198), which is hereby incorporated by reference and made a part hereof. This document is available for examination at Approval and Certification Center, RR 1, Box 251, Industrial Park Road, Triadelphia, WV 26059, and copies of the document are available from COMM 2000, 1414 Brook Drive, Downers Grove, IL 60515; Telephone: 888–853–3512 (toll free); *http://ulstandardsinfonet.ul.com.''*.

(e) Fuses shall be capable of completely interrupting a current within 30 milliseconds after initial current interruption, and shall not show any evidence of restriking after 30 milliseconds.

(f) The blown fuse shall show only superficial damage.

[37 FR 7562, Apr. 15, 1972, as amended at 43 FR 12316, Mar. 24, 1978; 60 FR 35694, July 11, 1995; 71 FR 16666, Apr. 3, 2006]

§ 28.41 Testing requirements; general.

(a) The open circuit voltage of the test circuit shall be 300 volts d.c., or 600 volts d.c., depending on the voltage rating of the fuse being tested.

(b) Time constant of the circuit (defined as T=L/R, where T is the time in seconds, L is the inductance in henries, and R is the resistance in ohms) shall be as follows:

(1) For 10,000 amperes and greater currents, T=0.016 second or more;

(2) For 1,000 amperes to 10,000 amperes, T=0.008 second or more;

(3) For 100 amperes to 1,000 amperes, T=0.006 second or more; and

(4) For less than 100 amperes, T=0.002 seconds or more.

(c) Test currents shall be as follows:

(1) 200 percent of rated current for fuses having 200 or less ampere rating, or 300 percent of rated current for fuses having greater than 200 ampere rating;

(2) 900 percent of rated current;

(3) 10,000 amperes; and

(4) 20,000 amperes.

(d) The voltage shall continue to be applied for at least 30 seconds after completion of circuit interruption.

(e) Five fuses of each case size shall be tested at each test current specified in paragraph (c) of this section, with the value of the fuse being the maximum value for the case size.

(f) Three of each lot of five fuses shall be preconditioned at 95 ±5 percent RH for not less than 5 days immediately prior to testing; and the other two fuses of each lot of five shall be preconditioned by heating to 90 °C. for 24 hours, and tested within 1 hour after removal from the preconditioning chamber.

(g) At least three of each lot of five fuses shall be tested in a fuse holder of a trolley-tap type, and the fuse holder shall remain intact and shall readily accept and retain a replacement fuse.