

§ 236.71

49 CFR Ch. II (10-1-05 Edition)

WIRES AND CABLES

§ 236.71 Signal wires on pole line and aerial cable.

Signal wire on pole line shall be securely tied in on insulator properly fastened to crossarm or bracket supported by pole or other support. Signal wire shall not interfere with, or be interfered by, other wires on the pole line. Aerial cable shall be supported by messenger.

[49 FR 3384, Jan. 26, 1984]

§ 236.72 [Reserved]

§ 236.73 Open-wire transmission line; clearance to other circuits.

Open-wire transmission line operating at voltage of 750 volts or more shall be placed not less than 4 feet above the nearest crossarm carrying signal or communication circuits.

§ 236.74 Protection of insulated wire; splice in underground wire.

Insulated wire shall be protected from mechanical injury. The insulation shall not be punctured for test purposes. Splice in underground wire shall have insulation resistance at least equal to the wire spliced.

§ 236.75 [Reserved]

§ 236.76 Tagging of wires and interference of wires or tags with signal apparatus.

Each wire shall be tagged or otherwise so marked that it can be identified at each terminal. Tags and other marks of identification shall be made of insulating material and so arranged that tags and wires do not interfere with moving parts of apparatus.

[49 FR 3384, Jan. 26, 1984]

INSPECTIONS AND TESTS; ALL SYSTEMS

§ 236.101 Purpose of inspection and tests; removal from service of relay or device failing to meet test requirements.

The following inspections and tests shall be made in accordance with specifications of the carrier, subject to approval of the FRA, to determine if the apparatus and/or equipment is maintained in condition to perform its in-

tended function. Electronic device, relay, or other electromagnetic device which fails to meet the requirements of specified tests shall be removed from service, and shall not be restored to service until its operating characteristics are in accordance with the limits within which such device or relay is designed to operate.

[49 FR 3384, Jan. 26, 1984]

§ 236.102 Semaphore or searchlight signal mechanism.

(a) Semaphore signal mechanism shall be inspected at least once every six months, and tests of the operating characteristics of all parts shall be made at least once every two years.

(b) Searchlight signal mechanism shall be inspected, and the mechanical movement shall be observed while operating the mechanism to all positions, at least once every six months. Tests of the operating characteristics shall be made at least once every two years.

[49 FR 3384, Jan. 26, 1984]

§ 236.103 Switch circuit controller or point detector.

Switch circuit controller, circuit controller, or point detector operated by hand-operated switch or by power-operated or mechanically-operated switch-and-lock movement shall be inspected and tested at least once every three months.

[49 FR 3384, Jan. 26, 1984]

§ 236.104 Shunt fouling circuit.

Shunt fouling circuit shall be inspected and tested at least once every three months.

§ 236.105 Electric lock.

Electric lock, except forced-drop type, shall be tested at least once every two years.

§ 236.106 Relays.

Each relay, the functioning of which affects the safety of train operations, shall be tested at least once every four years except:

- (a) Alternating current centrifugal type relay shall be tested at least once every 12 months;
- (b) Alternating current vane type relay and direct current polar type

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relay shall be tested at least once every 2 years; and

(c) Relay with soft iron magnetic structure shall be tested at least once every 2 years.

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§ 236.107 Ground tests.

(a) Except as provided in paragraph (b) of this section, a test for grounds on each energy bus furnishing power to circuits, the functioning of which affects the safety of train operation, shall be made when such energy bus is placed in service, and shall be made at least once every three months thereafter.

(b) The provisions of this rule shall not apply to track circuit wires, common return wires of grounded common single-break circuits, or alternating current power distribution circuits grounded in the interest of safety.

[49 FR 3384, Jan. 26, 1984]

§ 236.108 Insulation resistance tests, wires in trunking and cables.

(a) Insulation resistance of wires and cables, except wires connected directly to track rails, shall be tested when wires, cables, and insulation are dry. Insulation resistance tests shall be made between all conductors and ground, and between conductors in each multiple conductor cable, and between conductors in trunking, when wires or cables are installed and at least once every ten years thereafter.

(b) When insulation resistance of wire or cable is found to be less than 500,000 ohms, prompt action shall be taken to repair or replace the defective wire or cable and until such defective wire or cable is replaced, insulation resistance test shall be made annually.

(c) In no case shall a circuit be permitted to function on a conductor having an insulation resistance to ground or between conductors of less than 200,000 ohms during the period required for repair or replacement.

[49 FR 3384, Jan. 26, 1984]

§ 236.109 Time releases, timing relays and timing devices.

Time releases, timing relays and timing devices shall be tested at least once every twelve months. The timing shall

be maintained at not less than 90 percent of the predetermined time interval, which shall be shown on the plans or marked on the time release, timing relay, or timing device.

[49 FR 3384, Jan. 26, 1984]

§ 236.110 Results of tests.

(a) Results of tests made in compliance with §§ 236.102 to 236.109, inclusive; 236.376 to 236.387, inclusive; 236.576; 236.577; 236.586 to 236.589, inclusive; and 236.917(a) must be recorded on preprinted forms provided by the railroad or by electronic means, subject to approval by the FRA Associate Administrator for Safety. These records must show the name of the railroad, place and date, equipment tested, results of tests, repairs, replacements, adjustments made, and condition in which the apparatus was left. Each record must be:

(1) Signed by the employee making the test, or electronically coded or identified by number of the automated test equipment (where applicable);

(2) Unless otherwise noted, filed in the office of a supervisory official having jurisdiction; and

(3) Available for inspection and replication by FRA and FRA-certified State inspectors.

(b) Results of tests made in compliance with § 236.587 must be retained for 92 days.

(c) Results of tests made in compliance with § 236.917(a) must be retained as follows:

(1) Results of tests that pertain to installation or modification must be retained for the life-cycle of the equipment tested and may be kept in any office designated by the railroad; and

(2) Results of periodic tests required for maintenance or repair of the equipment tested must be retained until the next record is filed but in no case less than one year.

(d) Results of all other tests listed in this section must be retained until the next record is filed but in no case less than one year.

(e) Electronic or automated tracking systems used to meet the requirements contained in paragraph (a) of this section must be capable of being reviewed and monitored by FRA at any time to ensure the integrity of the system.