

**§ 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 intended 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 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

## § 236.108

current power distribution circuits grounded in the interest of safety.

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### § 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) Then 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.

Results of tests made in compliance with §§ 236.109 to 236.102, inclusive; 236.376 to 236.387, inclusive; 236.576; 236.577; and 236.586 to 236.589, inclusive, shall be recorded on preprinted or computerized forms provided by the railroad. Such forms shall 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 shall be signed by the employee making the test and shall be

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filed in the office of a supervisory official having jurisdiction. Results of tests made in compliance with § 236.587 shall be retained for 92 days. Results of all other tests listed in this section shall be retained until the next record is filed but in no case less than one year.

[53 FR 37313, Sept. 26, 1988]

## Subpart B—Automatic Block Signal Systems

### STANDARDS

#### § 236.201 Track-circuit control of signals.

The control circuits for home signal aspects with indications more favorable than “proceed at restricted speed” shall be controlled automatically by track circuits extending through the entire block.

#### § 236.202 Signal governing movements over hand-operated switch.

Signal governing movements over hand-operated switch in the facing direction shall display its most restrictive aspect when the points are open one-fourth inch or more and, in the trailing direction, three-eighths inch or more, except that where a separate aspect is displayed for facing movements over the switch in the normal and in the reverse position, the signal shall display its most restrictive aspect when the switch points are open one-fourth inch or more from either the normal or reverse position.

#### § 236.203 Hand operated crossover between main tracks; protection.

At hand-operated crossover between main tracks, protection shall be provided by one of the following:

(a) An arrangement of one or more track circuits and switch circuit controllers,

(b) Facing point locks on both switches of the crossover, with both locks operated by a single lever, or

(c) Electric locking of the switches of the crossover. Signals governing movements over either switch shall display their most restrictive aspect when any of the following conditions exist:

(1) Where protection is provided by one or more track circuits and switch