

§ 236.105

§ 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.

[49 FR 3384, Jan. 26, 1984]

§ 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) 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

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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 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 circuit controllers, and either switch is open or the crossover is occupied by a train, locomotive or car in such a manner as to foul the main track. It shall not be a violation of this requirement where the presence of sand, rust, dirt, grease or other foreign matter on the rail prevents effective shunting;

(2) Where facing point locks with a single lever are provided, and either switch is unlocked;

(3) Where the switches are electrically locked, before the electric locking releases.

§ 236.204 Track signaled for movements in both directions, requirements.

On track signaled for movements in both directions, a train shall cause one or more opposing signals immediately

ahead of it to display the most restrictive aspect, the indication of which shall be not more favorable than "proceed at restricted speed." Signals shall be so arranged and controlled that if opposing trains can simultaneously pass signals displaying proceed aspects and the next signal in advance of each such signal then displays an aspect requiring a stop, or its most restrictive aspect, the distance between opposing signals displaying such aspects shall be not less than the aggregate of the stopping distances for movements in each direction. Where such opposing signals are spaced stopping distance apart for movements in one direction only, signals arranged to display restrictive aspects shall be provided in approach to at least one of the signals. Where such opposing signals are spaced less than stopping distance apart for movements in one direction, signals arranged to display restrictive aspects shall be provided in approach to both such signals. In absolute permissive block signaling, when a train passes a head block signal, it shall cause the opposing head block signal to display an aspect with an indication not more favorable than "stop."

[33 FR 19684, Dec. 25, 1968, as amended at 49 FR 3384, Jan. 26, 1984]

§ 236.205 Signal control circuits; requirements.

The circuits shall be so installed that each signal governing train movements into a block will display its most restrictive aspect when any of the following conditions obtain within the block:

(a) Occupancy by a train, locomotive, or car,

(b) When points of a switch are not closed in proper position,

(c) When an independently operated fouling point derail equipped with switch circuit controller is not in derailing position,

(d) When a track relay is in de-energized position or a device which functions as a track relay is in its most restrictive state; or when signal control circuit is deenergized.

[33 FR 19684, Dec. 25, 1968, as amended at 49 FR 3385, Jan. 26, 1984]

§ 236.206 Battery or power supply with respect to relay; location.

The battery or power supply for each signal control relay circuit, where an open-wire circuit or a common return circuit is used, shall be located at the end of the circuit farthest from the relay.

§ 236.207 Electric lock on hand-operated switch; control.

Electric lock on hand-operated switch shall be controlled so that it cannot be unlocked until control circuits of signals governing movements over such switch have been opened. Approach or time locking shall be provided.

[49 FR 3385, Jan. 26, 1984]

Subpart C—Interlocking**STANDARDS****§ 236.301 Where signals shall be provided.**

Signals shall be provided to govern train movements into and through interlocking limits, except that a signal shall not be required to govern movements over a hand-operated switch into interlocking limits if the switch is provided with an electric lock and a derail at the clearance point, either pipe-connected to the switch or independently locked, electrically. Electric locks installed under this rule must conform to the time and approach locking requirements of Rule 314 (without reference to the 20-mile exceptions), and those of either Rule 760 or Rule 768, as may be appropriate.

§ 236.302 Track circuits and route locking.

Track circuits and route locking shall be provided and shall be effective when the first pair of wheels of a locomotive or a car passes a point not more than 13 feet in advance of the signal governing its movement, measured from the center of the mast, or if there is no mast, from the center of the signal.

[49 FR 3385, Jan. 26, 1984]

§ 236.303 Control circuits for signals, selection through circuit controller operated by switch points or by switch locking mechanism.

The control circuit for each aspect with indication more favorable than "proceed at restricted speed" of power operated signal governing movements over switches, movable-point frogs and derails shall be selected through circuit controller operated directly by switch points or by switch locking mechanism, or through relay controlled by such circuit controller, for each switch, movable-point frog, and derail in the routes governed by such signal. Circuits shall be arranged so that such signal can display an aspect more favorable than "proceed at restricted speed," only when each switch, movable-point frog, and derail in the route is in proper position.

§ 236.304 Mechanical locking or same protection effected by circuits.

Mechanical locking, or the same protection effected by means of circuits, shall be provided.

§ 236.305 Approach or time locking.

Approach or time locking shall be provided in connection with signals displaying aspects with indications more favorable than "proceed at restricted speed."

§ 236.306 Facing point lock or switch-and-lock movement.

Facing point lock or switch-and-lock movement shall be provided for mechanically operated switch, movable-point frog, or split-point derail.

§ 236.307 Indication locking.

Indication locking shall be provided for operative approach signals of the semaphore type, power-operated home signals, power-operated switches, movable-point frogs and derails, and for all approach signals except light signals, all aspects of which are controlled by polar or coded track circuits or line circuits so arranged that a single fault will not permit a more favorable aspect than intended to be displayed.

[49 FR 3385, Jan. 26, 1984]