

§ 234.265 Timing relays and timing devices.

Each timing relay and timing device shall be tested at least once every twelve months. The timing shall be maintained at not less than 90 percent nor more than 110 percent of the 41 pre-determined time interval. The pre-determined time interval shall be shown on the plans or marked on the timing relay or timing device. Timing devices which perform internal functions associated with motion detectors, motion sensors, and grade crossing predictors are not subject to the requirements of this section.

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

(a) Insulation resistance tests shall be made when wires or cables are installed and at least once every ten years thereafter.

(b) Insulation resistance tests shall be made between all conductors and ground, between conductors in each multiple conductor cable, and between conductors in trunking. Insulation resistance tests shall be performed when wires, cables, and insulation are dry.

(c) Subject to paragraph (d) of this section, 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. Until such defective wire or cable is replaced, insulation resistance tests shall be made annually.

(d) A circuit with a conductor having an insulation resistance of less than 200,000 ohms shall not be used.

(e) Required insulation resistance testing that does not conform to the required testing schedule of this section shall be completed in accordance with the following schedule:

- (1) Not less than 50% by the end of calendar year 1996;
- (2) Not less than a total of 75% by the end of calendar year 1997; and
- (3) One hundred percent by the end of calendar year 1998.

§ 234.269 Cut-out circuits.

Each cut-out circuit shall be tested at least once every three months to determine that the circuit functions as intended. For purposes of this section, a cut-out circuit is any circuit which

overrides the operation of automatic warning systems. This includes both switch cut-out circuits and devices which enable personnel to manually override the operation of automatic warning systems.

§ 234.271 Insulated rail joints, bond wires, and track connections.

Insulated rail joints, bond wires, and track connections shall be inspected at least once every three months.

§ 234.273 Results of inspections and tests.

(a) Results of inspections and tests made in compliance with this part shall be recorded on forms provided by the railroad, or by electronic means, subject to approval by the Associate Administrator for Safety. Each record shall show the name of the railroad, AAR/DOT inventory number, place and date, equipment tested, results of tests, repairs, replacements, adjustments made, and condition in which the apparatus was left.

(b) Each record shall be signed or electronically coded by the employee making the test and shall be filed in the office of a supervisory official having jurisdiction. Records required to be kept shall be made available to FRA as provided by 49 U.S.C. 20107 (formerly § 208 of the Federal Railroad Safety Act of 1970 (45 U.S.C. 437)).

(c) Each record shall be retained until the next record for that test is filed but in no case for less than one year from the date of the test.

REQUIREMENTS FOR PROCESSOR-BASED
SYSTEMS

§ 234.275 Processor-based systems.

(a) *Applicable definitions.* The definitions in § 236.903 of this chapter shall apply to this section, where applicable.

(b) *Use of performance standard authorized or required.* (1) In lieu of compliance with the requirements of this subpart, a railroad may elect to qualify an existing processor-based product under part 236, subparts H or I, of this chapter.

(2) Highway-rail grade crossing warning systems, subsystems, or components that are processor-based and that are first placed in service after June 6,

2005, which contain new or novel technology, or which provide safety-critical data to a railroad signal or train control system that is governed by part 236, subpart H or I, of this chapter, shall also comply with those requirements. New or novel technology refers to a technology not previously recognized for use as of March 7, 2005.

(3) Products designed in accordance with subparts A through D of this part, which are not in service but are in the developmental stage prior to December 5, 2005 (or for which a request for exclusion was submitted prior to June 6, 2005 pursuant to § 236.911 of this chapter), may be excluded from the requirements of part 236, subpart H of this chapter upon notification to FRA by March 6, 2006, if placed in service by December 5, 2008 (or March 7, 2008 for those products for which a request for exclusion was submitted to FRA prior to June 6, 2005). Railroads may continue to implement and use these products and components from these existing products. A railroad may at any time elect to have products that are excluded made subject to 49 CFR part 236, subpart H, by submitting a Product Safety Plan as prescribed in § 236.913 of this chapter and otherwise complying with part 236, subpart H of this chapter.

(c) *Plan justifications.* The Product Safety Plan in accordance with 49 CFR 236.907—or a PTC Development Plan and PTC Safety Plan required to be filed in accordance with 49 CFR 236.1013 and 236.1015—must explain how the performance objective sought to be addressed by each of the particular requirements of this subpart is met by the product, why the objective is not relevant to the product's design, or how the safety requirements are satisfied using alternative means. Deviation from those particular requirements is authorized if an adequate explanation is provided, making reference to relevant elements of the applicable plan, and if the product satisfies the performance standard set forth in § 236.909 of this chapter. (See § 236.907(a)(14) of this chapter.)

(d) *Specific requirements.* The following exclusions from the latitude provided by this section apply:

(1) Nothing in this section authorizes deviation from applicable design requirements for automated warning devices at highway-rail grade crossings in the Manual on Uniform Traffic Control Devices (MUTCD), 2000 Millennium Edition, Federal Highway Administration (FHWA), dated December 18, 2000, including Errata #1 to MUTCD 2000 Millennium Edition dated June 14, 2001 (<http://mutcd.fhwa.dot.gov/>).

(2) Nothing in this section authorizes deviation from the following requirements of this subpart:

(i) § 234.207(b) (Adjustment, repair, or replacement of a component);

(ii) § 234.209(b) (Interference with normal functioning of system);

(iii) § 234.211 (Security of warning system apparatus);

(iv) § 234.217 (Flashing light units);

(v) § 234.219 (Gate arm lights and light cable);

(vi) § 234.221 (Lamp voltage);

(vii) § 234.223 (Gate arm);

(viii) § 234.225 (Activation of warning system);

(ix) § 234.227 (Train detection apparatus)—if a train detection circuit is employed to determine the train's presence;

(x) § 234.229 (Shunting sensitivity)—if a conventional track circuit is employed;

(xi) § 234.231 (Fouling wires)—if a conventional train detection circuit is employed;

(xii) § 234.233 (Rail joints)—if a track circuit is employed;

(xiii) § 234.235 (Insulated rail joints)—if a track circuit is employed;

(xiv) § 234.237 (Reverse switch cut-out circuit); or

(xv) § 234.245 (Signs).

(e) *Separate justification for other than fail-safe design.* Deviation from the requirement of § 234.203 (Control circuits) that circuits be designed on a fail-safe principle must be separately justified at the component, subsystem, and system level using the criteria of § 236.909 of this chapter.

(f) *Software management control for certain systems not subject to a performance standard.* Any processor-based system, subsystem, or component subject to this part, which is not subject to the requirements of part 236, subpart H or I, of this chapter but which provides

safety-critical data to a signal or train control system shall be included in the software management control plan requirements as specified in §236.18 of this chapter.

[70 FR 72384, Dec. 5, 2005, as amended at 75 FR 2698, Jan. 15, 2010]

Subpart E—Emergency Notification Systems for Telephonic Reporting of Unsafe Conditions at Highway-Rail and Pathway Grade Crossings

SOURCE: 77 FR 35191, June 12, 2012, unless otherwise noted.

§ 234.301 Definitions.

As used in this subpart—

Answering machine means either a device or a voicemail system that allows a telephone caller to leave a recorded message to report an unsafe condition at a highway-rail or pathway grade crossing, as described in §234.303(c) and (d), and the railroad is able to retrieve the recorded message either remotely or on-site.

Automated answering system means a type of answering system that directs a telephone caller to a single menu of options, where the caller has the choice to select one of the available options to report an unsafe condition at a highway-rail or pathway grade crossing, as described in §234.303(c) and (d), and immediately after selecting one of the available menu options, the caller is transferred to a live telephone operator.

Class II and *Class III* have the meaning assigned by regulations of the Surface Transportation Board (49 CFR part 1201; General Instructions 1-1), as those regulations may be revised and applied by order of the Board (including modifications in class threshold based on revenue deflator adjustments).

Dispatches a train or *dispatches trains* means dispatches or otherwise provides the authority for the movement of the train or trains through a highway-rail or pathway grade crossing.

Dispatching railroad means a railroad that dispatches or otherwise provides the authority for the movement of one or more trains through a highway-rail or pathway grade crossing.

Emergency Notification System means a system in place by which a railroad receives, processes, and responds to telephonic reports of an unsafe condition at a highway-rail or pathway grade crossing. An Emergency Notification System includes the following components:

(1) The signs, placed and maintained at the grade crossings that display the information necessary for the public to report an unsafe condition at the grade crossing to the dispatching railroad by telephone;

(2) The method that the railroad uses to receive and process a telephone call reporting the unsafe condition;

(3) The remedial actions that a railroad takes to address the report of the unsafe condition; and

(4) The recordkeeping conducted by a railroad in response to the report of the unsafe condition at the grade crossing.

ENS means Emergency Notification System as defined in this section.

Farm grade crossing means a type of highway-rail grade crossing where a private roadway used for the movement of farm motor vehicles, farm machinery, or livestock in connection with agricultural pursuits, forestry, or other land-productive purposes crosses one or more railroad tracks at grade.

Highway-rail and pathway grade crossing means a highway-rail grade crossing and a pathway grade crossing.

Highway-rail or pathway grade crossing means either a highway-rail grade crossing or a pathway grade crossing.

Maintaining railroad means the entity (e.g., track owner or lessee) that is responsible for maintenance of the highway-rail or pathway grade crossing warning device, or for maintenance of other aspects of the highway-rail or pathway grade crossing. If the maintenance responsibility is handled by a contractor, such as maintaining a grade crossing warning system or track structure at the highway-rail or pathway grade crossing, then the contractor is considered the “maintaining railroad” for the purposes of this subpart.

Pathway grade crossing means a pathway that crosses one or more railroad tracks at grade and that is—