

Part 234—Grade Crossing Signal System Safety

Subpart D—Maintenance, Inspection, and Testing

Requirements for Processor-Based Systems

§234.275 Processor-based systems.

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, subpart H 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 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) Product safety plan justifications. The Product Safety Plan (see § 236.903 of this chapter) 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 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 Product Safety 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.)

234.275(d)

(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 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.

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