

**§ 234.203 Control circuits.**

All control circuits that affect the safe operation of a highway-rail grade crossing warning system shall operate on the fail-safe principle.

**§ 234.205 Operating characteristics of warning system apparatus.**

Operating characteristics of electromagnetic, electronic, or electrical apparatus of each highway-rail grade crossing warning system shall be maintained in accordance with the limits within which the system is designed to operate.

**§ 234.207 Adjustment, repair, or replacement of component.**

(a) When any essential component of a highway-rail grade crossing warning system fails to perform its intended function, the cause shall be determined and the faulty component adjusted, repaired, or replaced without undue delay.

(b) Until repair of an essential component is completed, a railroad shall take appropriate action under § 234.105, Activation failure, § 234.106, Partial activation, or § 234.107, False activation, of this part.

**§ 234.209 Interference with normal functioning of system.**

(a) The normal functioning of any system shall not be interfered with in testing or otherwise without first taking measures to provide for safety of highway traffic that depends on normal functioning of such system.

(b) Interference includes, but is not limited to:

(1) Trains, locomotives or other railroad equipment standing within the system's approach circuit, other than normal train movements or switching operations, where the warning system is not designed to accommodate those activities.

(2) Not providing alternative methods of maintaining safety for the highway user while testing or performing work on the warning systems or on track and other railroad systems or structures which may affect the integrity of the warning system.

**§ 234.211 Security of warning system apparatus.**

Highway-rail grade crossing warning system apparatus shall be secured against unauthorized entry.

**§ 234.213 Grounds.**

Each circuit that affects the proper functioning of a highway-rail grade crossing warning system shall be kept free of any ground or combination of grounds that will permit a current flow of 75 percent or more of the release value of any relay or electromagnetic device in the circuit. This requirement does not apply to: circuits that include track rail; alternating current power distribution circuits that are grounded in the interest of safety; and common return wires of grounded common return single break circuits.

**§ 234.215 Standby power system.**

A standby source of power shall be provided with sufficient capacity to operate the warning system for a reasonable length of time during a period of primary power interruption. The designated capacity shall be specified on the plans required by § 234.201 of this part.

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**§ 234.217 Flashing light units.**

(a) Each flashing light unit shall be properly positioned and aligned and shall be visible to a highway user approaching the crossing.

(b) Each flashing light unit shall be maintained to prevent dust and moisture from entering the interior of the unit. Roundels and reflectors shall be clean and in good condition.

(c) All light units shall flash alternately. The number of flashes per minute for each light unit shall be 35 minimum and 65 maximum.

**§ 234.219 Gate arm lights and light cable.**

Each gate arm light shall be maintained in such condition to be properly visible to approaching highway users. Lights and light wire shall be secured to the gate arm.