

(b) Each steam pressure gauge on a steam generator shall have a siphon that prevents steam from entering the gauge. The pipe connection shall directly enter the separator and shall be steam tight between the separator and the gauge.

**§ 229.109 Safety valves.**

Every steam generator shall be equipped with at least two safety valves that have a combined capacity to prevent an accumulation of pressure of more than five pounds per square inch above the allowed working pressure. The safety valves shall be independently connected to the separator and located as closely to the separator as possible without discharging inside of the generator compartment. The ends of the safety valve discharge lines shall be located or protected so that discharged steam does not create a hazard.

**§ 229.111 Water-flow indicator.**

(a) Steam generators shall be equipped with an illuminated visual return water-flow indicator.

(b) Steam generators shall be equipped with an operable test valve or other means of determining whether the steam generator is filled with water. The fill test valve may not discharge steam or hot water into the steam generator compartment.

**§ 229.113 Warning notice.**

Whenever any steam generator has been shut down because of defects, a distinctive warning notice giving reasons for the shut-down shall be conspicuously attached near the steam generator starting controls until the necessary repairs have been made. The locomotive in which the steam generator displaying a warning notice is located may continue in service until the next periodic inspection.

**§ 229.114 Steam generator inspections and tests.**

(a) *Periodic steam generator inspection.* Except as provided in § 229.33, each steam generator shall be inspected and tested in accordance with paragraph (d) of this section at intervals not to exceed 92 days, unless the steam generator is isolated in accordance with

paragraph (b) of this section. All non-complying conditions shall be repaired or the steam generator shall be isolated as prescribed in paragraph (b) of this section before the locomotive is used.

(b) *Isolation of a steam generator.* A steam generator will be considered isolated if the water suction pipe to the water pump and the leads to the main switch (steam generator switch) are disconnected, and the train line shut-off-valve is wired closed or a blind gasket is applied. Before an isolated steam generator is returned to use, it shall be inspected and tested pursuant to paragraph (d) of this section.

(c) *Forms.* Each periodic steam generator inspection and test shall be recorded on Form FRA F 6180-49A required by paragraph § 229.23. When Form FRA F 6180-49A for the locomotive is replaced, data for the steam generator inspections shall be transferred to the new Form FRA F6180-49A.

(d) *Tests and requirements.* Each periodic steam generator inspection and test shall include the following tests and requirements:

(1) All electrical devices and visible insulation shall be inspected.

(2) All automatic controls, alarms, and protective devices shall be inspected and tested.

(3) Steam pressure gauges shall be tested by comparison with a dead-weight tester or a test gauge designed for this purpose. The siphons to the steam gauges shall be removed and their connections examined to determine that they are open.

(4) Safety valves shall be set and tested under steam after the steam pressure gauge is tested.

(e) *Annual steam generator tests.* Each steam generator that is not isolated in accordance with paragraph (b) of this section, shall be subjected to a hydrostatic pressure at least 25 percent above the working pressure and the visual return water-flow indicator shall be removed and inspected. The testing under this paragraph shall be performed at intervals that do not exceed 368 calendar days.

[77 FR 21346, Apr. 9, 2012]

## § 229.115

## 49 CFR Ch. II (10–1–13 Edition)

### CABS AND CAB EQUIPMENT

#### § 229.115 Slip/slide alarms.

(a) Except for MU locomotives, each locomotive used in road service shall be equipped with a device that provides an audible or visual alarm in the cab of either slipping or sliding wheels on powered axles under power. When two or more locomotives are coupled in multiple or remote control, the wheel slip/slide alarm of each locomotive shall be shown in the cab of the controlling locomotive.

(b) Except as provided in § 229.9, an equipped locomotive may not be dispatched in road service, or continue in road service following a daily inspection, unless the wheel slip/slide protective device of whatever type—

(1) Is functioning for each powered axle under power; and

(2) Would function on each powered axle if it were under power.

(c) Effective January 1, 1981, all new locomotives capable of being used in road service shall be equipped with a device that detects wheel slip/slide for each powered axle when it is under power. The device shall produce an audible or visual alarm in the cab.

#### § 229.117 Speed indicators.

(a) After December 31, 1980, each locomotive used as a controlling locomotive at speeds in excess of 20 miles per hour shall be equipped with a speed indicator which is—

(1) Accurate within  $\pm 3$  miles per hour of actual speed at speeds of 10 to 30 miles per hour and accurate within  $\pm 5$  miles per hour at speeds above 30 miles per hour; and

(2) Clearly readable from the engineer's normal position under all light conditions.

(b) Each speed indicator required shall be tested as soon as possible after departure by means of speed test sections or equivalent procedures.

#### § 229.119 Cabs, floors, and passageways.

(a) Cab seats shall be securely mounted and braced. Cab doors shall be equipped with a secure and operable latching device.

(b) Cab windows of the lead locomotive shall provide an undistorted

view of the right-of-way for the crew from their normal position in the cab. (See also, Safety Glazing Standards, 49 CFR part 223, 44 FR 77348, Dec. 31, 1979.)

(c) Floors of cabs, passageways, and compartments shall be kept free from oil, water, waste or any obstruction that creates a slipping, tripping or fire hazard. Floors shall be properly treated to provide secure footing.

(d) Any occupied locomotive cab shall be provided with proper ventilation and with a heating arrangement that maintains a temperature of at least 60 degrees Fahrenheit 6 inches above the center of each seat in the cab compartment.

(e) Similar locomotives with open-end platforms coupled in multiple control and used in road service shall have a means of safe passage between them; no passageway is required through the nose of car body locomotives. There shall be a continuous barrier across the full width of the end of a locomotive or a continuous barrier between locomotives.

(f) Containers shall be provided for carrying fusees and torpedoes. A single container may be used if it has a partition to separate fusees from torpedoes. Torpedoes shall be kept in a closed metal container.

(g) Each locomotive or remanufactured locomotive placed in service for the first time on or after June 8, 2012, shall be equipped with an air conditioning unit in the locomotive cab compartment.

(h) Each air conditioning unit in the locomotive cab on a locomotive identified in paragraph (g) of this section shall be inspected and maintained to ensure that it operates properly and meets or exceeds the manufacturer's minimum operating specifications during the periodic inspection required for the locomotive pursuant to § 229.23 of this part.

(i) Each locomotive or remanufactured locomotive ordered on or after June 8, 2012, or placed in service for the first time on or after December 10, 2012, shall be equipped with a securement device on each exterior locomotive cab door that is capable of securing the door from inside of the cab.

[45 FR 21109, Mar. 31, 1980, as amended at 77 FR 21346, Apr. 9, 2012]