§ 179.400–20 Pressure relief devices.

(a) The tank must be provided with pressure relief devices for the protection of the tank assembly and piping system. The discharge from these devices must be directed away from operating personnel, principal load bearing members of the outer jacket, car structure, trucks and safety appliances. Vent or weep holes in pressure relief devices are prohibited. All main pressure relief devices must discharge to the outside of the protective housings in which they are located, except that this requirement does not apply to pressure relief valves installed to protect isolated sections of lines between the final valve and end closure.

(b) Materials. Materials used in pressure relief devices must be suitable for use at the temperature of the lading and otherwise compatible with the lading in both the liquid and vapor phases.

(c) Inner tank. Pressure relief devices for the inner tank must be attached to vapor phase piping and mounted so as to remain at ambient temperature prior to operation. The inner tank must be equipped with one or more pressure relief valves and one or more safety vents (except as noted in paragraph (c)(3)(iv) of this section), and installed without an intervening shut-off valve (except as noted in paragraph (c)(3)(iii) of this section). Additional requirements are as follows:

(1) Safety vent. The safety vent shall function at the pressure specified in §179.401–1. The safety vent must be flow rated in accordance with the applicable provisions of AAR Specifications for Tank Cars, appendix A (IBR, see §171.7 of this subchapter), and provide sufficient capacity to meet the requirements of AAR Specifications for Tank Cars, appendix A, A8.07(a).

(2) Pressure relief valve. The pressure relief valve must:

(i) be set to start-to-discharge at the pressure specified in §179.401–1, and

(ii) meet the requirements of AAR Specifications for Tank Cars, appendix A, A8.07(b).

(3) Installation of safety vent and pressure relief valve—(1) Inlet piping. The opening through all piping and fittings between the inner tank and its pressure relief devices must have a cross-sectional area at least equal to that of the pressure relief device inlet, and the flow characteristics of this upstream system must be such that the pressure