

§ 420.65

each explosive hazard facility, including the class and division for each solid explosive and the hazard and compatibility group for each liquid propellant; and

(3) A description of each activity to be conducted in each explosive hazard facility.

(b) A licensee operating a launch site located on a federal launch range does not have to comply with the requirements in §§ 420.65–420.69 if the licensee is in compliance with the federal launch range's explosive safety requirements.

(c) For explosive siting issues not otherwise addressed by the requirements of §§ 420.65–420.69, a launch site operator must clearly and convincingly demonstrate a level of safety equivalent to that otherwise required by part 420.

§ 420.65 Handling of solid propellants.

(a) A launch site operator shall determine the maximum total quantity of solid propellants and other solid explosives by class and division, in accordance with 49 CFR part 173, Subpart C, to be located in each explosive hazard facility where solid propellants or other solid explosives will be handled.

(b) When explosive divisions 1.1 and 1.3 explosives are located in the same explosive hazard facility, the total quantity of explosive shall be treated as division 1.1 for quantity-distance determinations; or, a launch site operator may add the net explosive equivalent weight of the division 1.3 items to the net weight of division 1.1 items to determine the total quantity of explosives.

(c) A launch site operator shall separate each explosive hazard facility where solid propellants and other solid explosives are handled from all other explosive hazard facilities, each public area and the launch site boundary by a distance no less than those provided for each quantity and explosive division in appendix E, table E-1.

(d) A launch site operator shall follow the following separation rules:

(1) A launch site operator shall employ no less than the applicable public area distance to separate an explosive hazard facility from each public area and from the launch site boundary.

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(2) A launch site operator shall employ no less than an intraline distance to separate an explosive hazard facility from all other explosive hazard facilities used by a single customer.

(3) For explosive division 1.1 only, a launch site operator may employ no less than 60% of the applicable public area distance, or the public traffic route distance, to separate an explosive hazard facility from a public area that consists only of a public highway or railroad line.

(4) A launch site operator may use linear interpolation for NEW quantities between table entries.

(5) A launch site operator shall measure separation distance from the closest debris or explosive hazard source in an explosive hazard facility.

§ 420.67 Storage or handling of liquid propellants.

(a) For an explosive hazard facility where liquid propellants are handled or stored, a launch site operator shall determine the total quantity of liquid propellant and, if applicable pursuant to paragraph (a)(3) of this section, the explosive equivalent of liquid propellant in each explosive hazard facility in accordance with the following:

(1) The quantity of liquid propellant in a tank, drum, cylinder, or other container is the net weight in pounds of the propellant in the container. The determination of quantity shall include any liquid propellant in associated piping to any point where positive means are provided for interrupting the flow through the pipe, or interrupting a reaction in the pipe in the event of a mishap.

(2) Where two or more containers of compatible liquid propellants are handled or stored together in an explosive hazard facility, the total quantity of propellant to determine the minimum separation distance between the explosive hazard facility and all other explosive hazard facilities and each public area shall be the total quantity of liquid propellant in all containers, unless:

(i) The containers are separated one from the other by the appropriate distance as provided by paragraph (b)(2) of this section; or

(ii) The containers are subdivided by intervening barriers, such as diking, that prevent mixing.

(iii) If paragraph (a)(2)(i) or (ii) of this section apply, a launch site operator shall use the quantity of propellant requiring the greatest separation distance pursuant to paragraph (b) of this section to determine the minimum separation distance between the explosive hazard facility and all other explosive hazard facilities and each public area.

(3) Where two or more containers of incompatible liquid propellants will be handled or stored together in an explosive hazard facility, a launch site operator shall determine the explosive equivalent in pounds of the combined liquids, using the formulas provided in appendix E, table E-2, to determine the minimum separation distance between the explosive hazard facility and other explosive hazard facilities and public areas unless the containers are separated one from the other by the appropriate distance as determined in paragraph (b)(3) of this section. A launch site operator shall then use the quantity of liquid propellant requiring the greatest separation distance to determine the minimum separation distance between the explosive hazard facility and all other explosive hazard facilities and each public area.

(4) A launch site operator shall convert quantities of liquid propellants from gallons to pounds using the conversion factors provided in appendix E, table E-3 and the following equation:

Pounds of propellant = gallons × density of propellant (pounds per gallon).

(b) A launch site operator shall use appendix E, table E-3 to determine hazard and compatibility groups and shall separate liquid propellants from each other and from each public area using distances no less than those provided in appendix E, tables E-4 through E-7 in accordance with the following:

(1) A launch site operator shall measure minimum separation distances from the hazard source in an explosive hazard facility, such as a container, building, segment, or positive cutoff point in piping, closest to each explosive hazard facility.

(2) A launch site operator shall measure the minimum separation distance between compatible liquid propellants using the “intragroup and compatible” distance for the propellant quantity and hazard group that requires the greater distance prescribed by appendix E, tables E-4, E-5, and E-6.

(3) A launch site operator shall measure the minimum separation distance between liquid propellants of different compatibility groups using the “public area and incompatible” distance for the propellant quantity and hazard group that requires the greater distance provided in appendix E, tables E-4, E-5, and E-6, unless the propellants of different compatibility groups are subdivided by intervening barriers that prevent mixing. If such barriers are present, the minimum separation distance shall be the “intragroup and compatible” distance for the propellant quantity and group that requires the greater distance provided in appendix E, tables E-4, E-5, and E-6.

(4) A launch site operator shall separate liquid propellants from each public area using a distance no less than the “public area and incompatible” distance provided in appendix E, tables E-4, E-5, and E-6.

(5) A launch site operator shall separate each explosive hazard facility that contains liquid propellants where explosive equivalents apply pursuant to paragraph (a)(3) of this section from all other explosive hazard facilities of a single customer using the intraline distance provided in appendix E, table E-7, and from each public area using the public area distance provided in appendix E, table E-7.

§ 420.69 Solid and liquid propellants located together.

(a) A launch site operator proposing an explosive hazard facility where solid and liquid propellants are to be located together shall determine the minimum separation distances between the explosive hazard facility and other explosive hazard facilities and public areas in accordance with one method provided in paragraphs (b), (c), or (d) of this section.