§ 420.71 Lighting protection.

(a) Lighting protection. A licensee shall ensure that the public is not exposed to hazards due to the initiation of explosives by lightning.

(1) Elements of a lighting protection system. Unless an explosive hazard facility meets the conditions of paragraph (a)(3) of this section, all explosive hazard facilities shall have a lighting protection system to ensure explosives are not initiated by lightning. A lighting protection system shall meet the requirements of this paragraph and include the following:

(i) Air terminal. An air terminal to intentionally attract a lightning strike.

(ii) Down conductor. A low impedance path connecting an air terminal to an earth electrode system.

(iii) Earth electrode system. An earth electrode system to dissipate the current from a lightning strike to ground.

(2) Bonding and surge protection. A lightning protection system must meet the requirements of this paragraph and include the following:

(i) Bonding. All metallic bodies shall be bonded to ensure that voltage potentials due to lightning are equal everywhere in the explosive hazard facility. Any fence within six feet of a lightning protection system shall have a bond across each gate and other discontinuities and shall be bonded to the lightning protection system. Railroad tracks that run within six feet of the lightning protection system shall be bonded to the lightning protection system.

(ii) Surge protection. A lightning protection system shall include surge protection to reduce transient voltages due to lightning to a harmless level for all metallic power, communication, and instrumentation lines entering an explosive hazard facility.

(3) Circumstances where no lighting protection system is required. No lightning protection system is required for an explosive hazard facility when a lightning warning system is available to permit termination of operations and withdrawal of the public to public area distance prior to an electrical storm, or for an explosive hazard facility containing explosives that cannot be initiated by lightning. If no lightning protection system is required, a licensee must ensure the withdrawal of the public to a public area distance prior to an electrical storm.

(4) Testing and inspection. Lightning protection systems shall be visually inspected semiannually and shall be tested once each year for electrical continuity and adequacy of grounding. A licensee shall maintain at the explosive hazard facility a record of results obtained from the tests, including any action taken to correct deficiencies noted.

(b) Electrical power lines. A licensee shall ensure that electric power lines at its launch site meet the following requirements:
(1) Electric power lines shall be no closer to an explosive hazard facility than the length of the lines between the poles or towers that support the lines unless an effective means is provided to ensure that energized lines cannot, on breaking, come in contact with the explosive hazard facility.

(2) Towers or poles supporting electrical distribution lines that carry between 15 and 69 KV, and unmanned electrical substations shall be no closer to an explosive hazard facility than the public area distance for that explosive hazard facility.

(3) Towers or poles supporting electrical transmission lines that carry 69 KV or more, shall be no closer to an explosive hazard facility than the public area distance for that explosive hazard facility.

APPENDIX A TO PART 420—METHOD FOR DEFINING A FLIGHT CORRIDOR

(a) Introduction

(1) This appendix provides a method for constructing a flight corridor from a launch point for a guided suborbital launch vehicle or any one of the four classes of guided orbital launch vehicles from table 1, §420.19, without the use of local meteorological data or a launch vehicle trajectory.

(2) A flight corridor includes an overflight exclusion zone in a launch area and, for a guided suborbital launch vehicle, an impact dispersion area in a downrange area. A flight corridor for a guided suborbital launch vehicle ends with the impact dispersion area, and, for the four classes of guided orbital launch vehicles, 5000 nautical miles (nm) from the launch point.

(b) Data requirements

(1) Maps. An applicant shall use any map for the launch site region with a scale not less than 1:250,000 inches per inch in the launch area and 1:20,000,000 inches per inch in the downrange area. As described in paragraph (b)(2), an applicant shall use a mechanical method, a semi-automated method, or a fully-automated method to plot a flight corridor on maps. A source for paper maps acceptable to the FAA is the U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Ocean Serv-

(i) Projections for mechanical plotting method. An applicant shall use a conic projection. The FAA will accept a “Lambert-Conformal” conic projection. A polar aspect of a plane-azimuthal projection may also be used for far northern launch sites.

(ii) Projections for semi-automated plotting method. An applicant shall use cylindrical, conic, or plane projections for semi-automated plotting. The FAA will accept “Mercator” and “Oblique Mercator” cylindrical projections. The FAA will accept “Lambert-Conformal” and “Albers Equal-Area” conic projections. The FAA will accept “Lambert Azimuthal Equal-Area” and “Azimuthal Equidistant” plane projections.

(iii) Projections for fully-automated plotting method. The FAA will accept map projections used by geographical information system software scaleable pursuant to the requirements of paragraph (b)(1).