

**§ 437.39**

meet the tracking requirements of § 437.67.

**§ 437.39 Flight rules.**

An applicant must provide flight rules as required by § 437.71.

**§ 437.41 Mishap response plan.**

An applicant must provide a mishap response plan that meets the requirements of § 437.75(b).

**Subpart C—Safety Requirements**

**§ 437.51 Rest rules for vehicle safety operations personnel.**

A permittee must ensure that all vehicle safety operations personnel adhere to the work and rest standards in this section during permitted activities.

(a) No vehicle safety operations personnel may work more than:

- (1) 12 consecutive hours,
- (2) 60 hours in the 7 days preceding a permitted activity, or
- (3) 14 consecutive work days.

(b) All vehicle safety operations personnel must have at least 8 hours of rest after 12 hours of work.

(c) All vehicle safety operations personnel must receive a minimum 48-hour rest period after 5 consecutive days of 12-hour shifts.

**§ 437.53 Pre-flight and post-flight operations.**

A permittee must protect the public from adverse effects of hazardous operations and systems in preparing a reusable suborbital rocket for flight at a launch site in the United States and returning the reusable suborbital rocket and any support equipment to a safe condition after flight. At a minimum, a permittee must—

(a) Establish a safety clear zone that will contain the adverse effects of each operation involving a hazard; and

(b) Verify that the public is outside of the safety clear zone before and during any hazardous operation.

**§ 437.55 Hazard analysis.**

(a) A permittee must identify and characterize each of the hazards and assess the risk to public health and safety and the safety of property re-

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sulting from each permitted flight. This hazard analysis must—

(1) Identify and describe hazards, including but not limited to each of those that result from—

- (i) Component, subsystem, or system failures or faults;
- (ii) Software errors;
- (iii) Environmental conditions;
- (iv) Human errors;
- (v) Design inadequacies; or
- (vi) Procedural deficiencies.

(2) Determine the likelihood of occurrence and consequence for each hazard before risk elimination or mitigation.

(3) Ensure that the likelihood and consequence of each hazard meet the following criteria through risk elimination and mitigation measures:

(i) The likelihood of any hazardous condition that may cause death or serious injury to the public must be extremely remote.

(ii) The likelihood of any hazardous condition that may cause major property damage to the public, major safety-critical system damage or reduced capability, a significant reduction in safety margins, or a significant increase in crew workload must be remote.

(4) Identify and describe the risk elimination and mitigation measures required to satisfy paragraph (a)(3) of this section. The measures must include one or more of the following:

- (i) Designing for minimum risk,
- (ii) Incorporating safety devices,
- (iii) Providing warning devices, or
- (iv) Implementing procedures and training.

(5) Demonstrate that the risk elimination and mitigation measures achieve the risk levels of paragraph (a)(3)(i) of this section through validation and verification. Verification includes:

- (i) Test data,
- (ii) Inspection results, or
- (iii) Analysis.

(b) A permittee must carry out the risk elimination and mitigation measures derived from its hazard analysis.

(c) A permittee must ensure the continued accuracy and validity of its hazard analysis throughout the term of its permit.