Commercial Space Transportation

QUARTERLY LAUNCH REPORT

Special Report:

Licensing of Commercial Launch Sites

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Special Report

LICENSING OF COMMERCIAL LAUNCH SITES

INTRODUCTION

The Commercial Space Launch Act of 1984 as recodified at 49 U.S.C. Subtitle IX--Commercial Space Transportation, ch. 701, Commercial Space Launch Activities, 49 U.S.C. §§ 70101- authorizes the Secretary of Transportation to license launches or the operation of launch sites carried out by U.S. citizens or within the United States. The Department of Transportation (DOT) has delegated this authority to the Federal Aviation Administration (FAA).

In order to enable the development and use of private launch sites, the FAA proposed amending its commercial space transportation licensing regulations to include licensing and safety requirements for the operation of launch sites. A Notice of Proposed Rulemaking (NPRM) has been developed and published in the Federal Register on June 25, 1999. The proposed regulations are designed to protect the public from the risks associated with activities at a launch site.

PROPOSED REGULATIONS

The proposed regulations will superceded the existing interim guidelines once they are issued as final rules, codifying the requirements for a launch site license.

ENVIRONMENTAL REVIEW

The FAA is required by law to assess the environmental impacts of constructing and operating a proposed launch site and to determine whether these activities will significantly affect the quality of the environment. Licensing the operation of a launch site is a major federal action for purposes of the National Environmental Policy Act (NEPA) at 42 U.S.C. 4321 et seq. An applicant will typically engage a contractor with specialized experience in the NEPA process to conduct the study underpinning the FAA's environmental analysis.

Site	Location	First Orbital Launch	FAA License Original Effective Date
California Spaceport	Vandenberg Air Force Base	2000	September 19, 1996
Spaceport Florida	Cape Canaveral Air Station	1998	May 22, 1997
Kodiak Launch Complex	Kodiak Island, Alaska	2000 (projected)	September 24, 1998
Virginia Spaceport	Wallops Island, Virginia	2001 (projected)	December 19, 1998

Table 1: US FAA Licensed Commercial Launch Sites

The FAA must prepare an environmental review that includes consideration of reasonable alternatives to the site. According to the Council on Environmental Quality (CEQ) regulations as interpreted by the courts, an applicant may not use the purchase of a site or construction at the site to limit the array of reasonable alternatives for that site's use. As a result, an applicant must complete the environmental process before construction on, or improvement of, the site. The FAA will not issue a license if an environmental review in accordance with all applicable regulations and guidelines is not concluded.

POLICY REVIEW

The FAA has proposed to conduct a policy review of an application for a license to operate a launch site. This is done to determine whether operation of the proposed launch site would jeopardize national security, foreign policy interests, or international obligations of the United States. The FAA conducts this policy review in coordination with other federal agencies that have responsibility for national and international interests. The Department of Defense is consulted to determine whether a license application presents any issues affecting national security. The Department of State reviews an application for issues affecting foreign policy or international obligations. Other agencies, such as NASA, are consulted as appropriate.

Under the proposed regulations an applicant would be required to supply information relevant to the FAA's policy approval, including, for example, identification of foreign ownership of the applicant. During a policy review, the FAA would consult with an applicant regarding any questions or issues before making a final determination. An applicant would have the opportunity to address any questions before completion of the review.

EXPLOSIVE SITE PLAN

The FAA has proposed to adopt the explosive safety practice in use at federal launch ranges today. These criteria (referred to as quantity-distance (Q-D) requirements), provide for separation of an explosive source from people and property that may otherwise be exposed to explosive events. They provide minimum separation distances between explosive hazard facilities, surrounding facilities and locations where the public may be present on the basis of the type and quantity of explosive material to be located within the area and have long been used to mitigate explosive hazards to an acceptable level.

The proposed regulations would require an applicant to submit an explosive site plan that shows the location of all explosive hazard facilities and distances between them, as well as the distances to public areas. It would also establish application procedures for an applicant to demonstrate compliance with the siting criteria. Minimum prescribed separation distances are necessary to protect the public from explosive hazards on a launch site so that the effect of an explosion does not reach the public.

An applicant would be required to provide the FAA with an explosive site plan that demonstrates compliance with these proposed Q-D requirements. The FAA must approve this plan, so applicants are cautioned not to begin construction of facilities requiring an explosives site plan

until obtaining FAA approval. Note also that the proposed Q-D requirements do not address any toxic hazards. Toxic hazards may be mitigated through procedural means, and the FAA will address toxic hazards in a separate rulemaking. If a toxic hazard is a controlling factor in siting, it should be considered along with the explosive hazards when the site plan is prepared.

The requirement to submit an explosive site plan to the FAA would not apply to an applicant applying for a license to operate a launch site at a federal launch range. Federal launch ranges have separate rules which are either identical or similar to the rules proposed, or permit mitigation measures which otherwise ensure safety.

LAUNCH SITE RELOCATION REVIEW

In order to gain launch site location approval, an applicant needs to prove to the FAA that a launch could be conducted from the site in question without jeopardizing public health and safety. This would not normally apply to an applicant who proposes to operate from an existing launch point at a federal launch range. The one exception to this rule is that if the applicant plans to use a launch point different than used previously by the federal launch range, or to use an existing launch point for a different type or larger launch vehicle than used in the past review will be necessary. The fact that launches have taken place safely from any particular launch point at a federal launch range may provide the same demonstration that would be accomplished by the FAA's proposed location review: namely, a showing that launch may occur safely from the site.

The proposed regulations would require an applicant to use specified methods to demonstrate the suitability of the launch site location for launching at least one type of launch vehicle, including orbital, guided sub-orbital, or unguided sub-orbital expendable launch vehicles, and reusable launch vehicles. Each proposed launch point on the launch site must be evaluated for each type of launch vehicle that the applicant wishes to have launched from that launch point.

An applicant will be provided with a choice of methods to develop a flight corridor for a representative launch of an orbital or guided sub-orbital expendable launch vehicle, or to develop a set of impact dispersion areas for a representative launch of an unguided sub-orbital expendable launch vehicle. If a flight corridor or set of impact dispersion areas exists that does not encompass populated areas, no additional analysis would be required. Otherwise a risk analysis must be conducted, which the FAA would review to ensure the applicant's process was correct, and would approve the launch site location if its risk criteria were met.

Under the proposed regulations, limited launch site location review would be needed if the applicant located a launch site at a federal launch range. The fundamental purpose of the FAA's proposed launch site location review, to assure that a launch may potentially take place safely from the proposed launch site, has been amply demonstrated at each of the ranges. As noted, exceptions may occur if a prospective launch site operator plans to use a launch site at a federal launch range for launches markedly different from past federal launch range launches, or if an applicant proposes a new launch point.

PRIVATE USE LAUNCH SITES

The proposed regulations specify who must obtain a license to operate a launch site, application requirements and licensee responsibilities. Because a launch licensee's license covers ground operations as well as the flight of a launch vehicle, a launch operator is not required to obtain a license to operate a launch site. A launch operator may select a launch site for its own launches and a launch operator only requires a license to launch unless the launch site is to be offered to others. The grant of a license to operate a launch site will not guarantee that a launch license will be granted for any particular launch proposed for the site. All launches are subject to separate FAA review and licensing.

GROUND SAFETY RESPONSIBILITIES

The FAA is proposing to impose specific ground safety responsibilities on a licensed launch site operator, and will require that an applicant demonstrate how those requirements will be met. A launch site operator license will involve responsibilities including: preventing unauthorized public access to the site; properly preparing the public and customers to visit the site; informing customers of limitations on use of the site; scheduling and coordinating hazardous activities conducted by customers. They would also include arranging for the clearing of air and sea routes and notifying adjacent property owners and local jurisdictions of the pending flight of a launch vehicle. Other launch site operator responsibilities would be: record keeping, tracking license transfer, accident investigation and compliance monitoring, and explosives.

Other federal government agencies have jurisdiction over a number of ground safety issues that FAA does not intend to duplicate their efforts. The FAA will, however, revisit ground safety issues in its development of rules for launches from non-federal launch sites.

Flight Safety

The proposed regulations promote ground safety by requiring the submission of an explosive site plan. Flight safety responsibilities are minimal as the FAA assigns almost all responsibility for flight safety (as well as significant ground safety responsibility) to a licensed launch operator.

Although extensive ground and flight safety requirements accompany a launch license, a launch site operator can also offer flight safety services or equipment to its customers. The adequacy of such service and equipment will typically be assessed in the FAA's review of a launch license application.