SITE OPERATORS LICENSE

Guidelines for Applicants

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of the

THE OFFICE OF COMMERCIAL SPACE TRANSPORTATION

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1.0 GENERAL

This document describes the information the U. S. Department of Transportation's Office of Commercial Space Transportation (OCST) will require of an applicant for a license to operate a commercial launch site.

2.0 OVERVIEW OF THE SITE OPERATOR LICENSING PROCESS

The Office of Commercial Space Transportation (OCST) issues site operator licenses based on the site operator's demonstration of the ability to ensure public safety and the safety of property, both on and off the site. We do not expect all of the information that will be included in the application to be available and submitted at the beginning of the application process.

Some of the representations and data submitted by the applicant, especially those for the Launch Site Safety Operations Document (LSSOD), described on page 6, are incorporated into the license and become binding on the site operator. License applicants are required to inform OCST of any proposed changes that would have a bearing on their application; licensed site operators are also required to inform OCST of material changes involving licensed activities.

OCST expects that the private sector's approach to launch site operations may be significantly different from the approach used by Federal ranges. However, while management arrangements may vary, the site operator's responsibility for safety is distinct from that of the launch operator. The site operator is responsible for protecting the public and site tenants from the day-to-day hazards that exist at an industrial facility designed to support the launch of launch vehicles. Under a site license, the site operator is required to manage hazards such as the storage and handling of propellants and toxic materials, fueling of launch vehicles and satellites, and so forth.

The launch operator has the ultimate responsibility, under an OCST license, for the risks or hazards associated with a particular launch or launches. The launch operator must ensure the adequacy of safety equipment, procedures, and personnel needed to conduct a safe flight. Under the Commercial Space Launch Act of 1984, as amended, 49 U.S.C. App 2601 et seq., (Act) the launch operator is required to obtain liability insurance or demonstrate financial responsibility sufficient to compensate for losses stemming from a failed launch.

The smaller vehicles being used by launch companies today are more mobile and require less supporting infrastructure than do older launch vehicles. Launch companies may use their own FTS designs, on-board flight safety systems, and to rely on proven flight safety procedures approved by OCST, regardless of which commercial launch site being used for a particular launch.

On the other hand, commercial launch site operators may provide critical flight safety services, such as tracking, command, control and communications, and flight safety personnel,

for customers who may need these services to support a safe launch. The site operator may request a "pre-approval" of these services. This pre-approval then could be used by a prospective launch operator in a launch license application. In addition, when such a pre-approval is granted to a licensed site operator, it will be an approval that exists outside the site operator's license so that if the service or approval is terminated, the site license remains unaffected.

It should be noted that pre-approval does not constitute satisfactory proof that a service meets the flight safety needs for the launch operator. The launch operator must demonstrate that the service satisfies the unique safety requirements of the launch operator's vehicle system, and that the operator exercises adequate oversight and coordination of that service to assure a safe flight.

Applicants should not hesitate to contact OCST if consultation is desired before an application is submitted or if they have questions about the Office's requirements during the application review process. Confidentiality can be requested in writing any time information is submitted for evaluation.

3.0 THE ENVIRONMENTAL REVIEW PROCESS

Depending on the nature of a proposed commercial launch site development and its operation, a Federal environmental assessment (EA) or an environmental impact statement (EIS) may be required by the National Environmental Policy Act, 42 U.S.C. 4321, et seq., (NEPA), Council on Environmental Quality (CEQ) guidelines, 40 CFR Parts 1500-1508, and the Department of Transportation's procedures for considering environmental impacts, DOT Order 5610.1C. The environmental review requirements are a critical part of the site operator licensing process. Environmental review can precede or take place concurrently with OCST's review of the safety aspects of an application for a site operator license. However, the length of the process usually requires that environmental review begin early to avoid construction delay. No construction or any other site preparation may begin until the environmental review is completed.

The applicant should refer to OCST's "Environmental Impact Statement Guidelines for the Development of Commercial Space Launch Facilities" for assistance in understanding the environmental requirements.

4.0 THE SITE OPERATOR LICENSE APPLICATION

4.1 GENERAL

The application includes site information requirements which an applicant for a site operator license must satisfy to demonstrate that the proposed launch and landing site is situated in a manner and place that can support the safe conduct of commercial space operations. An applicant for a site operator license must also demonstrate that it is capable of operating the proposed commercial site in a manner that will not jeopardize public health and safety, the safety of property, or U.S. national security and foreign policy interests. This site operations safety demonstration is accomplished through two requirements: (1) a hazard analysis that identifies each foreseeable launch site hazard, assesses the probability of occurrence and probability of adverse consequences of each hazard, and identifies and assesses the mitigation measures that will be used to eliminate or control the risks associated with those hazards, and (2) an LSSOD that contains detailed, specific means for addressing safety issues in the operation of the commercial launch site. EA/EIS data and/or analyses may be included where applicable.

The applicant shall explain the interfaces with planned users in the areas of ranges and flight safety, pre-launch operations, payload processing and landing operations. These interface explanations will define roles and responsibilities of the site operator and users, including overlapping responsibilities.

4.2 INFORMATION ABOUT THE APPLICANT

The application for a commercial launch site operator license should contain the name and address of the applicant, and also specify the site operator and the site owner if they are different. The application also should give the name, address, and telephone number of persons, including company officials and counsel, to whom inquiries and correspondence should be directed.

4.3 SITE INFORMATION REQUIREMENTS

4.3.1 Geographic Characteristics, Site Location and Size

The application must provide complete information on:

- The site location, size, shape, topographic, and geological characteristics of the site; applicant should include, as appropriate, area maps, geologic surveys, etc.
- the site's proximity to populated areas, highlighting populations or facilities that may present special safety considerations (e. g., hospitals, retirement homes, etc.), and
- any local commercial and recreational activities that may be affected by launches (e.g., air traffic, shipping, hunting, and offshore fishing); include, as appropriate, aeronautical maps, shipping charts.

4.3.2 Flight Paths and Impact Areas

Describe the planned possible flight paths and general impact areas designated for future launch and landing operations. If overland flight corridors are planned, the applications should describe, where feasible, any arrangements that have been made to clear the land of people.

As a guideline, the site operator is responsible for defining safe launch and landing corridors for planned users within the boundaries of the site. The site operator will provide flight safety analyses for generic sets of launch vehicle for overland areas beyond the boundaries of the site. Each launch vehicle operator will provide a detailed flight safety analyses beyond the site boundaries when they submit their launch vehicle operators license application.

4.3.3 Meteorological Environment

Provide climate and meteorological data, including extreme conditions, that may affect the safety of site operations. Parameters that should be addressed include temperature, surface and upper wind direction and velocity, and temperature inversions. The application should include the frequency (average number of days for each month) of extremes in wind or temperature inversion that could have an impact on launch operations.

4.4 SITE OPERATIONS

The applicant shall describe the planned day-to-day operations at the site during prelaunch/landing operations as well as during non-operational periods. This description will serve as a prelude to a description of the expected hazardous operations which will be discussed in Section 4.5. Administrative operations will be excluded. The applicant shall describe the operations at the site which are applicable to the authority of the Office and adequately defined by hazardous operations during prelaunch and landing activities.

4.5 HAZARD ANALYSIS

The OCST safety assessment process is concerned with the hazards that site operations might pose to individuals engaged in site operations, visitors to the site, and to people off an in the near proximity of the site. The hazard analysis is designed to demonstrate that the applicant fully understands and has plans to deal with all the general safety hazards associated with the launch and landing operations at the proposed site.

Although environmental impact studies (EIS) have a different purpose and thrust than the demonstration of safety necessary to obtain a site operator's license, these studies may provide a sound basis for identifying some safety hazards that the applicant will have to mitigate. Material in the application will cover a broader range of hazards affecting operations within a site's boundaries than would the EIS. An applicant may incorporate information or data from

studies prepared for its environmental impact statement to the extent that the data is relevant and appropriate.

In addition, an applicant may find OSHA regulations, 29 C.F.R. Part 1910, a useful reference in developing the overall facility safety policies, procedures, design and guidelines that will govern the operation of its activities and those of its future tenant customers. While OCST does not intend to require the licensed site operator to supervise, direct or manage operations of its on-site clientele, the safety policies, procedures, design and guidelines of the site operator should be sufficient that customers and tenants will have a generally consistent framework for responding to requirements such as those of OSHA and other Federal Safety regulatory agencies.

4.5.1 Hazard Identification and Assessment Section

All credible hazards should be addressed in this section. The hazards which are most credible or pose the greatest risk to individuals or property must undergo a systematic and thorough hazard assessment, including establishing the severity of the impact and the likelihood of occurrence of the hazards. The application also should identify any hazards the applicant determined, after analysis, to be non-credible. In reviewing the application, OCST may require that hazards not addressed by the applicant be specifically included in the hazard assessment.

4.5.2 Hazard Mitigation Section

All identified credible hazards affecting the safety of the public, property, and individuals on the site must be addressed through some mitigation measure that either eliminates, or adequately reduces, the likelihood of occurrence to assure public safety. Obviously the most effective form of mitigation is hazard elimination. Where elimination is not feasible, mitigation can be achieved through a combination of actions such as changes to the physical layout and/or design of the site, the implementation of safety policies and operating procedures, an effective safety organization, and establishing and ensuring qualifications of site operations personnel.

The description of the mitigation methods to be employed for a specific hazard must be specific and reference the layout feature, policy, and/or procedure being employed. Each mitigation method must be identified in sufficient detail to permit OCST inspectors, following issuance of the license, to verify that each mitigation method is in place and is being followed.

Where mitigation involves site safety policies and procedures, the documentation should contain a description of the policies and procedures that will be followed and, to the extent relevant, how these were developed. Where mitigation involves ensuring the qualifications of personnel in specific positions, the qualifications of those positions must also be detailed and

supported by documentation. The application should describe any means or system that the applicant proposes to use to establish and maintain personnel qualifications.

Once a site operator license has been issued, the licensee will be required to notify OCST of any proposed material changes to the operator's launch site operations and, when requested by OCST, to update the hazard assessment and hazard mitigation methods.

4.6 LAUNCH SITE SAFETY OPERATIONS DOCUMENT

The applicant must include with the application a Launch Site Safety Operations Document (LSSOD). The LSSOD is the most important document in the application because after a license has been issued, it will govern how the facility will be operated to ensure public safety and safety of property. Upon issuance of a site operator license, the licensee shall be responsible for ensuring that the commercial launch site operates at all times in accordance with the LSSOD. The following are the required elements of the LSSOD:

4.6.1 Safety Policies and Procedures

The LSSOD should contain copies of all safety policies and procedure manuals governing the conduct of hazardous activities on the site and the operation and maintenance of safety equipment. The documents should also identify and include all critical safety inspections.

4.6.2 Safety Organization and Personnel Qualification

The LSSOD should describe in detail an effective safety organization and a method of ensuring that personnel in safety-related positions are qualified to carry out the responsibilities of those positions.

- The LSSOD should include a detailed description of the site safety organization or function and its relationship to the overall site operation program, including lines of authority and responsibility, communications, and so forth, relative to the identification and resolution of safety issues and the implementation of safety policies and procedures.

- The staffing of the safety organization must be fully specified for the duration of the license period. The application should include a summary of the qualifications of each position responsible for safety inspections, safety oversight, and performance of safety critical and hazardous operations and procedures. All safety training requirements to be used in a program for qualifying personnel for safety positions should be set forth in detail, including the function performed, qualification requirements, and the means of maintaining personnel qualifications.

- Interface between all parts of the safety organization including, but not limited to, applicable safety disciplines such as explosive and ordnance safety, chemical and

biological safety, emergency and rescue operations must also be documented. This documentation should also include the interfaces between system safety and all other support disciplines such as maintenance, quality control, reliability, human factors engineering, and integrated logistics support.

4.6.3 Facility Layout

The LSSOD should include the layout of the proposed site. This information should be in the form of maps, site diagrams and facility drawings and should include the location of areas where hazardous materials are to be stored or handled. The applicant may describe any plans and policies it has regarding future growth and use of the launch site, and if changes are desired in the future, the operator may request an amendment.

4.6.4 Facilities and Equipment

The LSSOD should contain complete information about the safety-related facilities and equipment that are provided by the site operator. The application should include information on the location and placement of facilities and equipment, and design information and performance specifications for the permanent facilities and equipment.

4.6.5 Facility Users

The LSSOD should contain the criteria for approving and controlling the use of the site by launch operators and other users, and the inspection or other monitoring procedures that will be used to verify compliance with requirements established by the site operator and other users. The application should include the use criteria that will apply to each facility on the site with respect to hazardous operations allowed in the facility (e.g., fueling).

4.6.6 Facility Access/Security

The LSSOD should contain a discussion of the ability of emergency vehicles and user cargo to safely access the site. It also should contain provisions for controlling employee and public access to applicant's site and to hazardous areas during conduct of hazardous activities. Examples of provisions might include chain link fencing, a main entrance gate, badges, a visitor sign-in procedure, cipher/key locks on certain buildings, and controlled access and badge exchange in hazardous work areas.

4.6.7 Emergency Response Plans

The LSSOD should contain a description of the site operator's emergency plans in the event of an accident, incident or other occurrences. The plan should include a description of the resources and procedures for controlling and minimizing consequences of accidents (e.g., fires, contamination), countermeasures, notification of appropriate authorities, emergency access to controlled areas, and post-accident clean-up and disposal measures.

4.6.8 Accident Investigation Plans

The LSSOD must include procedures and criteria for reporting accidents, incidents, and other occurrences. Consistent with OCST's Accident Response and Investigation Plan (May 1991, Revision A), this plan should describe the investigation process and criteria for impounding data and physical evidence; describe the procedure for establishing investigation boards, committees or officials; and identify the positions responsible for establishing the investigative process and for reporting accidents, incidents, and other occurrences to OCST.

5.0 ADDITIONAL INFORMATION

Additional information may be requested by OCST following an assessment of the application materials.