DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 440

[Docket 28635; Notice 96–8]

RIN 2120–AF98

Financial Responsibility Requirements for Licensed Launch Activities

AGENCY: Federal Aviation Administration, Associate Administrator for Commercial Space Transportation, DOT.

ACTION: Notice of proposed rulemaking.

SUMMARY: The Associate Administrator for Commercial Space Transportation of the Federal Aviation Administration (FAA) currently prescribes financial responsibility requirements for licensees authorized to conduct commercial space launch activities on a case-by-case basis, after analyzing the risks associated with licensed activities. This proposed rulemaking would codify the Associate Administrator's approach to implementing these requirements in rules of general applicability. Specifically, the proposed regulations would establish how certain risks are allocated among the various launch participants and addressed through financial responsibility requirements, including statutorily-based reciprocal waivers of claims. The proposed regulations would also address eligibility for payment by the United States Government of certain third-party claims and this Notice requests comments on appropriate means of implementing this obligation. The FAA is undertaking this rulemaking initiative to implement financial responsibility requirements under the Commercial Space Launch Act of 1984, as amended, codified at 49 U.S.C. Subtitle IX, ch. 701, Commercial Space Launch Activities.

DATES: Comments must be received by September 23, 1996.

ADDRESSES: Comments should reference the docket number of this notice. Commenters should mail four copies of any comments to the FAA Rules Docket, Room 915G, Federal Aviation Administration, U.S. Department of Transportation, 800 Independence Avenue, SW., Washington, DC 20591. Persons wishing to receive acknowledgment of receipt of their comments should include a self-addressed, stamped postcard. Copies of materials relevant to this rulemaking, including copies of all public comments, are kept by the Rules Docket Technician, Room 915G, at the above address. The docket is available for inspection between 8:30 a.m. and 5 p.m., Monday through Friday, excluding Federal holidays.

FOR FURTHER INFORMATION CONTACT: Ms. Esta M. Rosenberg, Attorney-Advior, Regulations Division, Office of the Chief Counsel, Federal Aviation Administration, U.S. Department of Transportation, (202) 366–9305.

SUPPLEMENTARY INFORMATION:

Background

The Commercial Space Launch Act of 1984, as amended (the Act), 49 U.S.C. App. 2601–2623, codified, at 49 U.S.C. Subtitle IX, Commercial Space Transportation, ch. 701, Commercial Space Launch Activities, 49 U.S.C. 70101–70119, authorizes the Secretary of Transportation to license and regulate commercial space launches and the commercial operation of launch sites carried out within the United States or by its citizens. Among the stated purposes of the Act are protection of public health and safety, safety of property, and United States national security and foreign policy interests, as well as ensuring compliance with international treaty obligations of the United States. In carrying out the Act, the Secretary is required to encourage, promote, and facilitate private sector launch activities. Another objective is to facilitate development of a commercial space transportation sector that is capable of competing in the international market. The Secretary's responsibilities under the Act are carried out by the Associate Administrator for Commercial Space Transportation of the Federal Aviation Administration (Office). Prior to Fiscal Year 1996, the Secretary's responsibilies were carried out by the Office of Commercial Space Transportation, located within the Office of the Secretary of the Department of Transportation (DOT or Department). The Commercial Space Transportation Licensing Regulations set forth in 14 CFR Ch. III remain applicable to regulatory activities administered by the Office.

Current Industry Status

The commercial space industry is expanding and experiencing reinvigorated growth with the creation of new technologies and markets. U.S. commercial space revenues are estimated at $6.5 billion for 1994 and prospects are positive for continued growth. As a July 15, 1996, 63 DOT-licensed launches that have taken place since the first license was issued in 1998. Up to three big low earth orbit (LEO) telecommunications systems and two little LEO systems are projected for launch this decade, resulting in as many as 40 launches and 275 small satellites. Many other systems requiring additional launches are being planned and may increase projected launch rates.

The U.S. commercial launch industry is responding to increasing demands and heightened international competition with new launch concepts and innovative partnerships. In addition to conventional suborbital and orbital launches of expendable launch vehicles (ELVs) from earth to space, the Office has licensed launches involving a variety of innovative space transportation technologies including air-launched rockets and a reentry vehicle system. The Office has also begun discussions with industry on approaches to evaluating new reusable launch vehicle and sea-launch technologies. Currently, the private sector is conducting launch activities at four Federal launch ranges throughout the United States. Five States—Alaska, California, Florida, New Mexico, and Virginia—have plans under way for developing state-sponsored spaceports.

Evolution of U.S. Commercial Space Transportation Policy.

The first ten years of the U.S. commercial launch industry have been a period of transformation, informed by national policy and world events.

After passage of the Commercial Space Launch Act of 1984, the Government instituted policy and legislative initiatives encouraging commercial launches. Nevertheless, during this time, in the face of competing federal policies favoring maximum use of NASA's Space Transportation System and relatively low launch prices for services offered by the European launch operator, Arianespace, the U.S. private sector appeared reluctant to commit the resources necessary to compete for the relatively few launches of commercial satellites then available in the international market.

The commercial launch services market was altered dramatically in 1986 with the loss of the Space Shuttle Challenger. This event caused the United States Government to reverse its policy of reducing reliance on ELVs in favor of the Shuttle. On August 15, 1986, President Reagan announced a new United States Space Launch Strategy stating that NASA would ''no longer be in the business of launching private satellites,'' and that the government would be looking to the private sector to ''become a highly competitive method of launching

commercial satellites'' and ''clear[ing] away the backlog that has built up during this time when our shuttles are being modified.''

This decision removed the United States Government from direct competition with private launch services providers and, because the Challenger accident resulted in a backlog of payloads to be launched provided a potential market for U.S. launch firms. Shortly thereafter, the President initiated a comprehensive review of existing space policy for the purpose of providing a clear, unified statement of policy goals and directives.

On February 11, 1988, President Reagan issued a directive on National Space Policy that consolidated and updated previous Presidential guidance on space activities. The National Space Policy recognized for the first time a distinct commercial space sector, alongside the military and civilian government sectors, as an integral part of an overall national effort to maintain United States space leadership. Concurrent with release of the National Space Policy, the Administration announced a fifteen-point Commercial Space Initiative that reinforced one of the principal objectives of the Act: The promotion of a robust commercial launch industry. This objective was to be accomplished by, among other things, instituting a more equitable allocation of risk between the Government and private sector for commercial launch activities at Government ranges. This provision of the initiative consisted of two elements: A United States Government waiver of claims of property damage to Government property in excess of DOT-required insurance; and a United States Government waiver of claims covered on DOT-required insurance when loss of injury results from Government willful misconduct or recklessness.

Taken together, these policy initiatives created an environment that became more conductive to private investment in and business commitments to commercial space launch activities, and Federal agencies responded accordingly. Agencies operating United States Government launch facilities developed range support agreements to provide for commercial use of Government launch property and services in accordance with the Act. On April 4, 1988, the Office published DOT's Commercial Space Transportation Licensing Regulations, 14 CFR Ch. III, and on June 22, 1988, issued the first of 33 licenses issued to date.

Policy guidance supplementing the National Space Policy has been formulated to encourage further growth of private sector space activities. Most recently, on August 4, 1994, President Clinton announced a new National Space Transportation Policy reaffirming the Government's commitment to the commercial space transportation industry and the Department's critical role in licensing, facilitating and promoting commercial launch operations. Under this Policy, the Department, along with the Department of Commerce and other agencies as appropriate, is charged with developing an implementation plan focusing on measures to foster an internationally competitive U.S. launch capability. The Department also ensures that U.S. Government space technology plans address commercial space launch sector needs.

The 1988 Amendments

General

The Commercial Space Launch Act Amendments of 1988, Public Law 100–657 (1988 Amendments), replaced very general insurance requirements with a detailed, comprehensive financial responsibility and allocation of risk regime for commercial launch activities, including a more explicit exposition of the United States Government's risk-related rights and obligations. Reaffirmed, as part of the 1988 Amendments, is the Department's responsibility to protect United States interests when Government property or personnel is involved in supporting licensed activities.

The principal features of the regime include risk-based insurance requirements, limited Government payment of certain third-party claims, and reciprocal waivers of liability among launch participants. Participants in licensed launch activities are protected from potentially unlimited liability by: (1) requiring the licensee to provide insurance (or otherwise demonstrate financial responsibility) based on maximum probable loss determinations that: (a) protects launch participants, including the United States Government, from third-party liability (in an amount not exceeding the lesser of $500 million or the maximum available on the world market at reasonable cost) (49 U.S.C. 70112(a)), and (b) compensates for damage or loss to United States Government property (in an amount not exceeding $100 million) (49 U.S.C. 70112(a)); and (2) providing for payment by the United States Government of successful third-party claims up to $1.5 billion in excess of the required amount of third-party liability insurance, subject to enactment by Congress of an appropriations law or other legislative authority (49 U.S.C. 70113(a)(1)). In addition, the goal of allocating risks and costs associated with licensed activities is met by requiring participants to enter into reciprocal waivers of claims in which each party absorbs certain losses it may sustain as a result of licensed activities. 49 U.S.C. 70112(b). Taken together, these provisions are intended to achieve a fair allocation among the various parties, including the United States Government, of the risks attendant to their involvement in commercial launch activities.

The Office has been implementing the financial responsibility and allocation of risk provisions of the 1988 Amendments on a case-by-case basis, consistent with the adjudicatory process established by the Office in the Commercial Space Transportation Licensing Regulations, 14 CFR Ch. III. Since early 1989, when the first license was issued after the 1988 Amendments became effective, licenses have included a license order devoted entirely to insurance and other financial responsibility requirements that must be satisfied as conditions of each license. As of July 15, 1996, 63 launches have been conducted pursuant to these requirements. As a result of this experience, the Office believes that many provisions included in license orders may be standardized in rules of general applicability. The specific amounts of required insurance would be set forth in a license order.

Although requirements would be standardized, licensees may ask for relief from a particular regulatory requirement by petitioning the Associate Administrator for Commercial Space Transportation using the procedures set forth in § 404.3 of the Commercial Space Transportation Licensing Regulations (14 CFR § 404.3).

Allocation of Risk and Payment of Excess Claims Provisions

The 1988 Amendments focus on two areas of risk allocation: (1) Protecting the commercial launch industry against catastrophic losses from third-party liability claims; and (2) limiting possible claims among launch participants. At the same time, the 1988 Amendments are directed at minimizing the potential liability of the United States as a launching state under international law; and protecting the United States Government, including its agencies, personnel and contractors, from liability, loss of injury resulting from the Government's participation in commercial launch activities by providing launch support to commercial launch services providers.

This effort to insulate the United States Government and its agencies, personnel and contractors involved in DOT-licensed launch activities from a significant measure of exposure to liability, loss or injury resulting from licensed activities is important because of the Government's liability exposure. This exposure derives from two sources. Under international treaty, especially the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (Outer Space Treaty) (entered into force October 1967), and the Convention on International Liability for Damage Caused by Space Objects (Liability Convention) (entered into force September 1972), the United States Government has accepted certain obligations to compensate parties outside the United States for damage, including personal injury and loss of life, caused by space objects launched from the United States or by persons or entities whose activities are supervised or overseen by the United States Government. In addition, when the Government is involved in private sector launch activities through use of its property, facilities, equipment or personnel to support and facilitate those activities, the United States Government risks damage or injury to its own property and personnel and legal liability for other losses. It is the Office's view that, under the 1988 Amendments, risk for these losses should be allocated primarily to the nongovernmental launch participants, subject to three important exceptions, and the statutory requirements for insurance and waivers of claims must be construed and implemented to effect this allocation of risk. (The term ''nongovernmental'' is used throughout this discussion to mean launch participants other than U.S. Government, its agencies, contractors and subcontractors, and the employees of each.)

The three important exceptions are those risks that the U.S. Government affirmatively accepts under the Act. They are: (1) The risk otherwise borne by the U.S. commercial launch industry of catastrophic losses and unlimited liability associated with commercial launch activities, up to the statutory limit of $1.5 billion above required third-party liability insurance, subject to enactment of legislation, 49 U.S.C. 70113(a); (2) the risk of property damage or loss to United States Government launch property or facilities in excess of required insurance, 49 U.S.C. 70112(b)(2); and (3) acceptance of liability for death, bodily injury or property damage or loss that results from the willful misconduct of the United States Government or its agents, 49 U.S.C. 70112(e).

The Office believes that acceptance of these risks by the United States Government is necessary in order to accomplish the goals underlying the 1988 Amendments; that is for the U.S. commercial launch industry to compete effectively against foreign launch services providers that offer certain financial assurances from their governments,[1] and to limit the amount of liability insurance that must be obtained to protect launch participants without, in industry's words, their ''betting the company'' on each launch.

Not surprisingly, the linchpin of the allocation of risk regime in industry's view has been the United States Government's agreement to protect launch participants against the risk of catastrophic losses and unlimited liability associated with commercial launch activities. Pursuant to the 1988 Amendments, the Department seeks to provide this protection, or so-called ''indemnification,'' by preparing a compensation plan that the President submits to Congress for review and approval, and, if necessary, enactment of additional legislative authority providing for the payment of claims.

Significantly, the 1988 Amendments do not expressly mandate indemnification of launch participants and, unlike the 1988 Price-Anderson Amendments. Pub. L. 100–408, the notion of a ''contract of indemnification'' does not appear. Rather the 1988 Amendments lay out a mechanism by which Congress may enact legislation to appropriate the requested funds. Accordingly, it would be inappropriate to refer to the payment of excess claims provisions without recognizing the role Congress must play in enacting appropriations. Nevertheless, it is the Office's view that the 1988 Amendments represent an undertaking by Congress to allocate to the United States Government the risk of certain losses, including damage to Government property in excess of required Government property insurance, and excess third-party claims. In this manner, commercial launch operators, their customers, and the contractors and subcontractors of each may be relieved from some of the risk associated with commercial launch activities. In return, the United States Government is protected from liability and loss by required insurance at no cost to the Government

Risk-Based Insurance Requirements

One of the principal features of the 1988 Amendments is the Department's mandate to establish risk-based insurance requirements. Under the Act, the amount of required insurance is prescribed based on the Department's determination of the ''maximum probable loss'' that would result from licensed activities.

Before enactment of the 1988 Amendments, section 16 of the Act prescribed general liability insurance requirements. It specified that any person launching a launch vehicle or operating a launch site under a license issued by the Department have in effect liability insurance, at least in the amount that the Department considered necessary for the licensed launch or operation, considering the international obligations of the United States.[2] These obligations include, in particular, any United States obligations as a signatory to the Liability Convention.

On May 7, 1985, the Office published an Advance Notice of Proposed Rulemaking on third-party liability insurance requirements for commercial space launch activities (the ANPRM), 50 FR 19280, focusing exclusively on implementation issues relating to section 16 of the Act.

The ANPRM reflected the Office's conclusion that liability insurance should be adequate to compensate parties not participating in licensed launch activities for losses or damages resulting from those activities. The Office sought to identify considerations other than international obligations of the United States to be taken into account. Other general issues highlighted in the ANPRM were: (1) Whether evidence of insurance (including significant levels of risk retention) should be the exclusive

[1] At the time the 1988 Amendments were enacted, entrants to the commercial launch industry expressed deep concern over potentially open-ended exposure to liability for damages associated with launch activities that could undermine the position of United States firms vis-a-vis their foreign competitors. For example, while customers of Arianespace benefited from full indemnification by the French Government for all third-party liability that exceeded required insurance levels of 400 million French francs (approximately $65 million in 1988), corresponding protection was not available to customers of emerging commercial launch services providers in the United States. Consequently, from a commercial perspective, foreign launch services providers possessed a significant competitive advantage over U.S. firms.

[2] Each person who launches a launch vehicle or operates a launch site under a license issued or transferred under this Act shall have in effect liability insurance at least in such amount as is considered by the Secretary to be necessary for such launch or operation, considering the international obligations of the United States. The Secretary shall prescribe such amount after consultation with the Attorney General and other appropriate agencies.'' 49 U.S.C. App. 2615.

means of demonstrating financial responsibility; and (2) whether the Office should require launch services providers to obtain the maximum amount of liability insurance commercially available at reasonable rates (the standard employed by NASA in requiring insurance for commercial payloads launched on the Space Shuttle), or, alternatively, whether the Office should conduct an analysis of the risks arising from a launch and set appropriate financial responsibility requirements based upon that analysis. The ANPRM also sought comments on whether the Office should vary liability insurance requirements by vehicle class and the duration of licensed activities, and what factors the United States Government should consider in deciding whether to seek compensation from responsible parties for damages for which the United States may be held liable under United States or international law.

Ten private parties submitted comments in response to the ANPRM. They included one commercial operator of a privatized United States expendable launch vehicle (ELV) launch system, three entrepreneurial launch firms, two space insurance brokers, two government aerospace contractors, and two law students.

Most of the comments addressed the amount of liability insurance the Office should require and the appropriate standard for making that determination. Only three of the commenters, the insurance brokers and an entrepreneurial launch services provider, supported utilization of NASA's approach of requiring that launch services providers obtain the maximum amount of insurance commercially available at reasonable rates. One insurance broker favored applying this standard to the actual launch phase only, arguing that risk analysis should be employed in setting requirements for on-orbit liability coverage. All of the other launch and aerospace firms that commented favored the risk analysis approach.

Commenters differed on the issue of duration of required insurance coverage. One commenter favored requiring coverage only for the launch phase, another preferred the useful life of a payload, and a third recommended insurance be maintained as long as a physical object remains in space. Only two commenters addressed the question of whether the Office should distinguish among the different ELV launch systems in setting third-party liability insurance requirements, both favoring making such distinctions if justified by risk analysis. In addition to the issues on which the ANPRM requested comment, five commenters argued that the United States Government should indemnify private launch firms and their contractors for damages that exceed the amount of required coverage. One commenter urged that the United States either re-interpret its responsibilities under, or withdraw from, the Liability Convention.

Following publication of the ANPRM, and in light of most commenters' endorsement of insurance requirements based on an analysis of risk, the Office developed a risk analysis approach to determining acceptable levels of public exposure to hazards associated with commercial launches, and it began applying risk analysis techniques on an application-specific basis. The Office's risk analysis approach was based upon extensive studies it had conducted on the risks associated with commercial launches and launch operations, and on the utility of various analytical techniques for quantifying them. These studies include a three-volume report, dated May 1988, entitled ''Hazard Analysis of Commercial Space Transportation'' and an ''Assessment of Third Party Liability Insurance Associated with Commercial Expendable Launch Vehicles,'' each of which is available from the Office.

At the time the 1988 Amendments were enacted, the Office was preparing a rulemaking action to establish risk analysis as the preferred method for determining appropriate levels of insurance for licensed activities. The need to propose adoption of this approach became moot. In requiring maximum probable loss determinations, Congress effectively codified the Office's approach by mandating risk analysis as the basis on which the Department establishes required levels of financial responsibility under the Act.

This rulemaking is intended to provide definition to the statutory term, ''maximum probable loss,'' in terms of the Office's approach to prescribing insurance requirements for each launch license issued. ''Maximum probable loss'' does not mean maximum possible loss, that is, a ''worst case'' scenario regardless of likelihood. The Office determines maximum probable loss for licensed launch activities by analyzing the known hazards, and the probability of loss, associated with specific launch activities. A detailed explanation of maximum probable loss methodology is presented in the section-by-section analysis below.

Implementation Issues Following the 1988 Amendments

In early 1989, the Risk Management Working Group of the Commercial Space Transportation Advisory Committee (COMSTAC)[3] developed implementation positions on the 1988 Amendments, including a recommendation that the scope of required liability insurance coverage be commensurate with the scope of potential liability of those persons involved in providing launch services—the licensee, its customer, the U.S. Government, and the contractors and subcontractors of each—resulting from activities carried out under the license. In its view, potential liability arose with the licensee's entry upon the launch complex. Additionally, the waiver of claims provisions and the so-called ''indemnification'' provisions of the Act were viewed as being equally broad in scope. The COMSTAC further recommended that post-launch protection under the Act remain in place for at least three years following ignition of the launch vehicle for flight.

In carrying out its licensing responsibilities, the Office began issuing licenses in 1989, authorizing a specific launch and preparatory launch site operations associated with the conduct of that launch. This approach was intended to satisfy industry's expectations, including those voiced by COMSTAC, and be consistent with the Department's understanding of the 1988 Amendments. Within two years, the Office issued the first of several operator licenses issued to date. Under this approach, the Office licensed and established financial responsibility requirements for site operations associated with the conduct of a program of commercial launches for a two-year period.

This approach to licensing reflected an understanding between the Office and the U.S. Air Force, as the Department of Defense (DOD) element responsible for management of the Eastern Range, encompassing Cape Canaveral Air Station, and the Western Range, encompassing Vandenberg Air Force Base, to avoid conflicting insurance and liability requirements when commercial launch operators

[3] The COMSTAC, a duly chartered federal advisory committee consisting of public and private sector representatives appointed by the Secretary to advise on matters affecting the commercial space transportation industry, has taken a very active role in reviewing and commenting on the Office's implementation of the 1988 Amendments. Based on its reviews, the COMSTAC submitted formal recommendations to the Secretary. These recommendations are available in the docket for this proposed rulemaking.

conduct operations on Air Force ranges in support of commercial launch activities under a range use agreement. Despite this understanding with the Air Force, certain questions remain between the Office and the Air Force as well as other Federal agencies that operate and manage Federal range facilities.

A September 1992 COMSTAC resolution reaffirmed COMSTAC's view that the financial responsibility regime should be construed broadly so as to cover all activities conducted by a licensee on a Federal range. Under this view, referred to as ''gate-to-gate'' licensing, all of a licensee's activities conducted on a Federal range in support of its commercial launch operations would be subject to DOT-determined financial responsibility requirements and eligibility for so-called indemnification. To address this and other uncertainties associated with the intended scope of the 1988 Amendments, the resolution recommended that the Department seek clarification by legislative means.

October 27–28, 1994 Public Meeting

The Office convened a two-day public meeting on October 27–28, 1994, to elicit industry views on, among other things, a range of issues associated with implementation of the 1988 Amendments. The meeting concentrated on licensing issues associated with commercial launch operations and the commercial operation of launch sites. One of the focal points of the meeting was a discussion of the appropriate scope of a license authorizing commercial launch activities and its relationship to financial responsibility and allocation of risk requirements.

At the public meeting and in written comments submitted to the docket, industry remained fairly consistent in its view that the Office's licensing authority should be broadly construed to address risks associated with the flight of a launch vehicle and pre-flight hazardous operations in order to protect public health and safety. One commenter suggested that, as a starting point, it would be useful to look at those unusually hazardous activities for which the Government agrees to offer indemnification under other authority, such as Public Law 85–804, in attempting to determine the range of activities properly encompassed by the Department's licensing authority.

Two launch services providers and one DOD element commented that all pre-launch processing on a Federal range should be licensed for purposes of the Act's financial responsibility requirements and setting the levels of required insurance. Other commenters observed that it is no longer sufficient to limit DOT licensing to activities done on a Federal range because, increasingly, launch operators are engaging in hazardous pre-launch processing activities off the range, either to reduce their costs or because they are not permitted to use Government facilities where comparable, off-range commercial services exist. A number of commenters, including a DOD element, an insurance broker, a prospective commercial spaceport operator and two launch services providers, suggested that DOT-licensed activities should include hazardous, as distinct from ultra-hazardous, operations defined in terms of risk, not geography, because the Office's mandate is protection of public safety. The prospective spaceport operator also suggested using the license as a kind of safety net to avoid gaps in regulatory oversight. In contrast, another Government agency representative offered a different approach, noting that other regulatory regimes would apply to hazardous operations when conducted somewhere other than at a Federal range.

As an example of hazardous operations requiring licensing, a number of commenters, including a payload processing facility, stated that payload processing, whether conducted on a Federal range or at a privately operated facility located off the Federal range, should be covered by a DOT license. One launch company noted that manufacturing is not sufficiently hazardous as to warrant DOT licensing, but certain testing is. However, a prospective spaceport operator noted that manufacturing may be hazardous and, if so, should be covered by a DOT license. Another prospective spaceport operator stated that licensing matters should be separated from the issue of indemnification altogether, and noted that one could conceive of licensed activity without indemnification if the purpose of licensing is protection of public safety. The commenter suggested a narrower approach than that of licensing all activities conducted by a launch licensee on a Federal range, noting that material may be stored at the range for a long time in advance of a scheduled launch.

Two DOD elements advocated that the Office establish maximum probable loss requirements for all commercial activities conducted on a Federal range facility. One of the agencies also indicated that the Office should set maximum probable loss requirements any time Government property would be placed at risk for commercial purposes, including coverage for commercial development and demonstration activities conducted on a Federal range.

One launch services provider noted the benefits to the public of requiring statutory financial responsibility and allocation of risk requirements, along with so-called indemnification, in that third-party recovery for losses need not depend upon the financial health of a launch company. For example, without Government regulation, small start-up companies with limited financial means might buy less insurance than the Office would otherwise prescribe in insurance requirements.

Another launch services provider noted that the financial responsibility requirements should be coextensive with a license. That is, the Government should provide indemnification to the extent activities are covered by a license. Likewise, according to the launch services provider, if there is no indemnification offered by the Government for an activity then it can be inferred that the Office has not licensed that activity. The commenter noted that this is not clear today.

In a related rulemaking, the Office is planning to address, more specifically, such issues as the appropriate scope of a license to conduct commercial launches and the activities subject to the Department's licensing authority. As part of that rulemaking, the Office intends to address comprehensively those comments received at the public meeting concerning the appropriate scope of a license and licensable activities. The instant rulemaking focuses on implementation of financial responsibility requirements and the allocation of risks that attend licensed launch activities, as those activities are defined in a license issued by the Office.

The Proposed Regulations

Scope and Objectives

The proposed regulations are intended to implement the full range of statutorily-imposed financial responsibility requirements and carry out the Department's responsibility under the Act to protect U.S. interests when Government property or personnel is involved in supporting licensed launch activities. The proposed regulations also clarify the means by which the commercial launch industry and its customers are provided with the assurances and protections that have been considered critical to their survival.

This rulemaking does not address financial responsibility requirements for the operation of a launch site. To date, all U.S. commercial launches have taken place from U.S. Government facilities.

The Office believes that this fact will change in the not too distant future. Plans for developing state-sponsored spaceports in five states are under way and the Office is currently developing regulations that would apply to prospective applicants for licenses to operate launch sites or spaceports. The Office is also in the process of developing policies applicable to the appropriate implementation of financial responsibility requirements for launch site operators, including spaceports, consistent with the Act. As part of this effort, the Office requests comments on the full range of financial responsibility and risk allocation issues associated with licensing the operation of a launch site.

More specifically, under the Act, a licensee is required to obtain two forms of insurance (or otherwise demonstrate financial responsibility) to compensate for certain claims ''resulting from an activity carried out under the license''—liability insurance that protects participants in launch services from third-party liability and property insurance that protects Government property. 49 U.S.C. 70112(a). No distinction is made in the Act between the holder of a license to launch a launch vehicle and the holder of a license to operate a launch site. As one commenter pointed out at the October 1994 public meeting, the legislative history accompanying the 1988 Amendments provides no guidance as to whether, or how, financial responsibility and allocation of risk requirements would apply to a licensed operator of a launch site.

One view under consideration by the Office is that the insurance that is required under a license to conduct licensed launch activities would be sufficient to protect United States interests as well as those of a licensed launch site operator. This view presumes that the potentially catastrophic risks that the 1988 Amendments intended to address are those associated with hazardous launch operations, and that the risks attendant to the industrial activity of managing a launch site can be managed effectively through available industrial risk insurance as a cost of doing business, and through contractual agreements between the site operator and its customers and contractors. Risks to the launch site operator change when licensed launch activities are conducted at the site, and the launch site operator should be protected as an additional insured under the launch licensee's liability policy because of the launch site operator's involvement in launch services. With respect to risks associated with other activities, a launch site operator can protect itself by requiring adherence to its own safety procedures and requirements and through business decisions regarding the need to obtain insurance.

At the public meeting, one commenter representing a prospective spaceport licensee suggested an approach consistent with this view. The commenter noted that site operations not related to a particular launch may not be covered by the Act, and that the launch operator and launch site operator, rather than the Office, can allocate responsibilities between themselves. Launch-specific activities carried out at the site would be covered under the Act, in the commenter's view. However, another commenter at the public meeting noted that a state-sponsored spaceport could serve a consortium of commercial users, and the relationship between them may not be one of prime contractor and subcontractor. Another prospective state-sponsored spaceport representative commented that there is no need for the Office to license a spaceport operator if it is under the supervision and oversight of another Federal agency, such as the Air Force, and conducting operations as a subcontractor to the launch company. Similarly, a DOD element commented that the Office should review safety operations of a state-sponsored spaceport located on a Federal range facility only for purposes of determining maximum probable loss.

Additional comments are solicited on the appropriate implementation of the financial responsibility and allocation of risk regime with respect to licensed launch site operators, including state-sponsored spaceports. Comments should address the requirements that would apply to an operator of a commercial launch site located on private property and that located on or adjacent to a Federal range facility.

Implementation by the Office of the financial responsibility and allocation of risk requirements through license orders has resulted in some uncertainty and controversy over the scope of required insurance as well as the Government's obligation to cover excess third-party claims. Some issues result directly from the terminology used in the Act and have been voiced by both the Office and industry in a variety of fora, such as the October 1994 public meeting and COMSTAC meetings. Others have been aired by industry, from time to time, expressing disagreement with or concern over the Office's implementation of the requirements. In come instances, industry has offered a view contrary to that held by the Office, as reflected in license orders. In others, industry has complained that lack of clarity leaves both industry and the U.S. Government vulnerable to unintended disputes over the appropriate mechanism for compensating claims.

The proposed regulations, as well as the Act, acknowledge that the commercial space industry must bear certain risks and costs associated with launch activities. However, the Office believes these risks and costs to be reasonable in light of the potential benefits industry receives.[4] Moreover, the Office believes that issuing regulations will result in an additional benefit to the commercial space industry. That is, the increased certainty and clarity that will result from issuance of final regulations should prove beneficial to industry by allowing it to manage risks appropriately, through insurance and other business decisions and compete effectively in an increasingly competitive world market. At the same time, the Office remains mindful of the Government's unique interests and concerns.

In addition to protecting the United States Government from certain liability risks, this rulemaking proposal also recognizes the importance of valuable national range assets to the continued growth, vitality, viability and competitiveness of the U.S. commercial launch industry. One of the principal objectives of the statutory requirements is to ensure that these assets are protected, and that in the event of damage or loss, funds are available to restore the affected launch property to its present condition and use. Thus, when Government facilities or personnel are involved in licensed launch activities, the Department is authorized to establish requirements for proof of financial responsibility and other assurances necessary to protect the Government and its executive agencies and personnel from liability, death, bodily injury, or property damage or loss as a result of licensed activities. However, the Government is not relieved of liability that results from willful misconduct of the Government or its agents.

In protecting the interests of Government personnel, the statutory financial responsibility and allocation of risk requirements also recognize the role Government contractors and subcontractors, and their respective employees, perform in supporting commercial launch-related operations on Federal range facilities on behalf of

[4] An economic impact assessment has been prepared and is available in the public docket for this proposed rulemaking for review and comment.

the Government. For this reason, in establishing financial responsibility and allocation of risk requirements, the Department also ensures that their interests are protected. The Office solicits views on whether its approach to protecting Government contractors' and subcontractors' interests should be adopted in a final rule.

To facilitate the reader's review of this proposal, the Office's rationale for allocating and addressing certain risks is presented below under appropriate topic headings, preceding the section-by-section analysis. This approach should prove useful to the reader in understanding how certain risks would be addressed through both the required demonstration of financial responsibility and waivers of claims among the launch participants. The section-by-section analysis that follows describes and discusses specific provisions of the proposed implementing regulations which, taken together, effectuate the intent of the Act.

Protection of Government Personnel

In providing direct support for commercial launch operations, either through its agencies or contractors, the U.S. Government necessarily exposes itself and certain Government personnel to potential losses and liabilities. Accordingly, under the approach the Office has adopted in the proposed regulations, certain Government personnel need to be afforded a variety of protections through the financial responsibility and allocation of risk regime. These protections are necessary to ensure that the U.S. Government does not bear any greater risk than it affirmatively accepts under the statute.

Through the proposed regulations, risks to Government personnel, including employees of Government contractors and subcontractors, posed by their involvement in licensed launch activities are addressed as follows:

1. Government personnel, including employees of the Government, its agencies, and its contractors and subcontractors, involved in licensed launch activities, would be included within the definition of third parties.

2. Government personnel, including employees of the Government, its agencies, and its contractors and subcontractors, involved in licensed launch activities, would be named as additional insured under the required third-party liability policy.

3. Claims for damage or loss to property belonging to the Government, its agencies, contractors and subcontractors, involved in licensed launch activities, would be covered under the required Government property policy, *even if* the damage or loss is caused by Government personnel, including employees of the Government, its agencies, and its contractors and subcontractors, involved in licensed launch activities, absent their willful misconduct.

These three forms of protection from risk are explained below, in order.

1. The proposed regulations would clarify that Government employees are included within the definition of third parties. This is significant because it means that Government employees' claims for property damage or bodily injury would be compensated under the third-party liability insurance policy (or other demonstration of financial responsibility) required of the licensee up to the limit the Office establishes, within the statutory ceiling, based upon the Office's determination of maximum probable loss. (An explanation of the Office's risk-basing methodology for setting insurance requirements is set forth in the section-by-section analysis, below.)

The definition of third parties would also include employees of U.S. Government contractors and subcontractors involved in licensed launch activities to ensure that their claims would also be covered by the required third-party liability insurance policy, in accordance with the statue.

This approach is in accord with the definition of ''third party'' contained in the statute, 49 U.S.C. 70102(11), and the legislative history which expressly states that ''Government personnel directly associated with the commercial launch operations are still classified as third parties.'' S. Rep. No. 100–593, 100 Cong., 2d Sess. 8 (1988). This protection is necessary to minimize the risk the U.S. Government would otherwise bear if it were to accept responsibility for these claims under the Act.

Currently, through a reciprocal waiver of claims agreement executed by the Office on behalf of the U.S. Government, the United States waives and releases claims it may have against the licensee and customer and their respective contractors and subcontractors, and agrees to be responsible, for property damage it sustains in excess of required insurance, and for bodily injury or property damage sustained by its employees in excess of required insurance.[5] The Government is required to extend this waiver of claims and assumption of responsibility to its contractors and subcontractors. This practice would be altered under the proposed regulations in the following way. Because claims of Government employees and employees of Government contractors and subcontractors against the other launch participants would be covered as third-party claims under the liability insurance policy that the licensee obtains, the U.S. Government would not be required to assume responsibility for them as part of the reciprocal waiver of claims required in 49 U.S.C. 70112(b)(2). This approach deviates from the current practice of the Office but, we believe, more precisely reflects the intent of the statute.

Given that Government personnel are deemed third parties, their claims against the other launch participants would be presented as part of the successful third-party claims for which industry would seek payment from the Government under the payment of excess claims provision of the statute (so-called ''indemnification''). In essence, the Government's agreement to protect launch participants from third-party claims in excess of required insurance would extend to cover the outstanding claims of its employees, and Government contractor and subcontractor employees, after the limits of the insurance policy obtained by the licensee have been reached.

An alternative view—that Government personnel should not be considered third parties—has been suggested by representatives of the commercial space launch industry. This view suggests that the 1988 Amendments assigned to the United States Government an assumption of responsibility and risk for losses sustained by Government personnel, including Government employees and employees of Government contractors and subcontractors, who are involved in licensed activities. This assumption of risk would be in addition to the three areas of risk the Government has agreed to accept under the Act, as delineated above. The Office does not agree.

Considering Government personnel as third parties enables their claims to be covered by required third-party liability insurance under 49 U.S.C.

[5] The reciprocal waiver of claims agreement is used by the Office to implement the Government's statutory responsibility to waive claims. 49 U.S.C. 70112(b)(2) requires a Government waiver only to the extent claims exceed the amount of insurance that is required to protect Government property. However, under current practice, the agreement provides that claims for injury or losses suffered by employees of the Government are waived only to the extent those claims exceed the required amount of third-party liability insurance. One reason the Office has taken this approach is that if Government employee claims for bodily injury or property damage were compensated under the property policy rather than the liability policy, the Government's waiver of claims for property damage could be triggered too soon leaving Government claims for property damage or loss uncompensated.

70112(a)(3)(A)(i). Absent this protection for Government employees, the Government would be assuming an unfunded contingent liability for the successful claims of Government employees against other launch participants, without explicit statutory authority for doing so. This is contrary to appropriations laws. The Office does not believe that explicit statutory authority is provided by the Government waiver of claims provision of the Act, which limits the Government's waiver to excess property damage claims. 49 U.S.C. 70112(b)(2). Absent this protection for employees of Government contractors and subcontractors, additional costs to protect Government contractors and subcontractors from these risks would likely be passed to the Government, defeating the statutory directive to protect the Government from certain liability risks, at no cost to the Government.

In the Office's view, this approach is beneficial to both the U.S. Government and nongovernmental launch participants. Nongovernmental launch participants are protected from claims by Government personnel, including employees of the Government's contractors and subcontractors, for loss of injury, by means of required liability insurance and procedures for U.S. Government payment of excess third-party claims, up to $1.5 billion above the required amount of liability insurance. The U.S. Government is protected in the event its personnel, as well as those operating on behalf of the Government, are exposed to risk of property damage or bodily injury because their claims will be compensated under the liability policy the licensee obtains at no cost to the Government. Considering Government personnel as third parties is not intended to supplant the individual rights of Government employees to file claims under the Federal Employees' Compensation Act (FECA), or the rights of Government contractor employees under workers compensation laws.

2. Government personnel would be protected from third-party liability, absent their willful misconduct. The statute explicitly requires that the Government, ''executive agencies and personnel, contractors, and subcontractors of the Government'' be protected under an insurance policy required under section 70112(a), ''to the extent of their potential liability for involvement in launch services, at no cost of the Government.'' 49 U.S.C. 70112(a)(4). Therefore, under the liability policy, Government personnel are both protected parties, or additional insureds, and potential claimants.

3. Under the property policy required under 49 U.S.C. 70112(a)(1)(B), United States Government property is protected from damage from any source as a result of licensed activities, that is, even if the damage is caused by Government personnel, absent their willful misconduct.

Property Protection for Government Launch Participants

In addition to protection from third-party liability, as explained above, Government launch participants are protected from the risk of their own property losses where their property, facilities, equipment or personnel, are used to support commercial launch operations. In the Office's view, this risk is allocated primarily to the licensee, who is required under 49 U.S.C. 70112(a)(1)(B) to obtain liability insurance (or otherwise demonstrate financial responsibility), up to the $100 million statutory ceiling, to compensate for the maximum probable loss from claims by the U.S. Government against a person for damage or loss to Government property resulting from an activity carried out under the license. The Government waives claims for property damage to the extent those claims exceed the required amount of insurance or result from willful misconduct of the government or its agents.

This requirement to protect Government property addresses an important objective—to assure that facilities used by commercial launch operators can be restored promptly to current launch-ready status. These facilities are considered critical to U.S. national security interests and funds must be readily available to repair them in the event they are damaged as a result of commercial launch activities.

Two recurring issues are the scope of Governmental property that must be protected by property insurance and the extent to which Government property that is either on a Federal range but not used to support a licensee's launch, or off the Federal range entirely, is required to be covered by insurance. Government property on a Federal range that is not used for commercial launch support purposes may include anything from a U.S. Post Office to launch vehicles or components that are intended for use exclusively in Government launch operations.

The Office's view is that *any* U.S. Government property that is on a Federal range facility is exposed to damage or loss as a result of licensed launch activities conducted on that facility. Accordingly, coverage for all such property must be provided to ensure the U.S. Government is fully compensated. The only exception would be for a Government payload where the Government is the customer for the licensed launch activity. (A discussion of how different types of Government property on a Federal range facility are considered in establishing insurance requirements for Government property is presented in the section-by-section analysis accompanying proposed § 440.7, Determination of Maximum Probable Loss.)

It is also the Office's view that Government range facility assets that are not on the launch facility from which the launch takes place, but are identified as being exposed to damage or loss as a result of licensed launch activities, should also be covered by the required property insurance. For example, a licensed launch at Cape Canaveral Air Station, Florida, could expose Government assets on neighboring Kennedy Space Center (KSC) to damage or loss. Under the proposed regulations, the Office would include these assets in determining appropriate insurance levels for Government property and prescribe that property at KSC be covered. The Office believes that this approach is necessary and reasonable to carry out the statutory mandate of protecting Government range assets exposed to risk from commercial launch activities. Similarly, a licensed launch conducted at a commercially operated launch site or spaceport situated on, or adjacent to, a Federal range facility, would expose the Federal range facility to risk of damage or loss. Accordingly, insurance to protect the Federal range facility placed at risk would be required even if there were no Government involvement in supporting licensed launch activities conducted at the commercial launch site.

In the Office's view, Government property that is involved in licensed launch activities but is located at a site that is remote from the launch site would be covered by the third-party liability insurance protection required of the licensee because risk to that property should be no greater than the risk posed to other third-party property. Government property meeting this description would include, for example, remote Government tracking stations and other support facilities located downrange from the Federal range facility at which the launch takes place.

Accordingly, Government property that is not located on the Federal range facility from which the launch takes place or not located at a neighboring

Federal range facility would be included under the third-party liability insurance protection required of the licensee. This would include any unrelated Government property located outside of a Federal range facility, such as a U.S. Post Office building.

It has been suggested that the additional cost of covering all Government property, wherever located, would be prohibitive. However, the Office views the U.S. Government as situated similarly to any other third party for purposes of calculating maximum probable loss for property damage claims off the range, subject to the limited exception noted above for nearly Federal range facility assets located in close proximity to, or adjacent to, a Federal range. This is because the probability of damaging unrelated government property away from the launch site is no different from that of damaging private property off the launch site. The Office does not believe that this coverage should increase the cost of liability insurance or expand the risks covered by the policy.

In summary, all Government property on a Federal range facility, whether or not involved in licensed launch activities, must be covered by the required Government property insurance policy (or other demonstration of financial responsibility). Federal range facility assets adjacent to or in close proximity to the launch site where licensed launch activities take place would also be covered by required property insurance. Government property located away from the Federal range facility that is used to support licensed launch activities, such as downrange tracking stations, are not covered by the required Government property insurance policy, nor is Government property that is located off the Federal range facility and totally unrelated to licensed launch activities. Instead, with respect to these Government assets, the Government is a third party and its claims for loss or damage would be covered under the required third-party liability insurance policy (of other demonstration of financial responsibility), up to the limits required by the Office.

Some of the confusion surrounding the required coverage of Government property results from the manner in which licensees have satisfied the financial responsibility requirements for protecting Government property. Some licensees have obtained two types of policies to address Government property. One policy typically provides coverage for United States Government property, including property of United States Government contractors and subcontractors, that the licensee utilizes or otherwise has in its care, custody or control at the site where licensed launch activities take place. The second policy provides third-party liability coverage for all other property, including Government property located elsewhere on the Federal range facility. In the first policy, the United States and its contractors and subcontractors are the named insureds; in the second policy, the additional insureds are the same parties as those protected in satisfying the third-party liability insurance requirement. This approach accommodates certain customary insurance practices in covering property losses but is not required by the Office.

However, where a licensee elects to protect certain Government property under its third-party liability insurance policy, coverage cannot be allowed to limit or dilute the availability of insurance proceeds to cover third-party liability claims. To avoid this possibility, some licensees have submitted a liability insurance certificate indicating two levels of coverage, *i.e.*, one amount to cover claims for damage to Government property that is not in the licensee's care, custody or control and another amount for ''other' third-party liability, claims.

The proposed regulations would continue the Office's current practice, implemented through license orders, of requiring coverage for property of Government contractors and subcontractors under the Government property policy. The Office's rationale for doing so includes the following considerations. Absent certain protections for Government contractors and subcontractors, the Government would bear greater risk and incur greater expense than is contemplated under the statute's risk and incur greater expense than is contemplated under the statute's risk allocation regime. Section 70112(b)(2) of the Act requires the Secretary of Transportation to enter into reciprocal waivers of claims under the licensee, its customer, and the contractors and subcontractors of each, ''for the Government, executive agencies of the Government involved in launch services, and contractors and subcontractors involved in launch services. * * *'' The waiver applies only to the extent that claims are more than the amount of Government property insurance or other demonstration of financial responsibility required under 49 U.S.C. 70112(a)(1)(B). By waiving claims ''for'' its contractors and subcontractors involved in launch services, the Government passes certain rights and responsibilities to its contractors and subcontractors, consistent with those the Government accepts, including the waiver of claims for property damage above required insurance. In light of the waiver the Government undertakes on behalf of its contractors, the Government would necessarily assume greater risk or costs if the Government's contractors and subcontractors were not also protected by required Government property insurance. If there were no insurance protection provided by the licensee for property of Government contractors and subcontractors involved in launch services, those parties would be likely to seek compensation for their losses from the Government. Thus, the Government would be accepting the risk of property losses in excess of required insurance, *plus*, ad a practical matter, responsibility for property losses incurred by its contractors and subcontractors. Alternatively, Government contractors and subcontractors could purchase property insurance protection, as a licensee has suggested; however, the cost would likely be passed through to the Government as an allowable cost under a contract with the Government. This is contrary to the statutory directive that the Government be afforded certain protections at no cost to the Government.

In determining to adopt this approach in the proposed regulation, the Office also considered whether coverage for property of Government contractors and subcontractors could be provided under the third-party liability insurance protection the licensee is required to obtain. This approach is contrary to the definition of ''third party'' contained in the statute at 49 U.S.C. 70102(11) and was not further considered.

There is one important distinction in the requirement to protect property of Government contractors and subcontractors in the Office's view, however. That is, with respect to the Government and its agencies, all Government property on a Federal range facility must be protected. With respect to Government contractors and subcontractors, only property on a Federal range facility belonging to those contractors and subcontractors involved in licensed launch activities must be covered under the property policy. Government contractors and subcontractors that do not support licensed launched activities or whose property is located away from a Federal range facility would be protected as third parties under the liability policy, and their claims for injury, damage or loss would be compensated by the required third-party liability policy. For

example, a food concessionnaire located on a Federal range facility would be considered a third party for purposes of insurance and risk allocation.

One licensee has noted its disagreement with the Office's requirement. In the licensee's view, requiring this coverage is contrary to the statute and legislative history. The licensee has sought clarification of the Office's requirements to avoid the potential for duplicative, or possibly unnecessary, coverage under the liability and property policies.

The Office disagrees with the licensee's contention for the reasons explained above. The U.S. Government utilizes contractors and subcontractors in carrying out certain activities at Federal range facilities. Accordingly, for purposes of risk allocation and protection of the U.S. Government, its contractors and subcontractors stand in the shoes of the Government and its agencies involved in launch services. The Office believes that any other view would defeat reasonable implementation of the Amendments.

The Office believes that a variety of risk management approaches to protecting Government property may be acceptable as long as the statutory objectives are achieved; that is, providing for the compensation of property damage sustained by the United States, its agencies involved in launch services, and its contractors and subcontractors, resulting from activities carried out under the license and ensuring that policy proceeds will be made available to the Government to effect needed repairs in the event of any damage resulting from licensed launch activities. These objectives can best be met through a non-fault, non-subrogation, comprehensive all-risk type of property policy that would compensate the U.S. Government on behalf of itself and Government launch participants, as additional insureds, in the event of any occurrence resulting in property damage, regardless of fault, absent willful misconduct by the Government or its agents. In order to satisfy statutory objectives, the policy must respond to damage *caused by* Government launch participants, as well as Government personnel, *i.e.,* employees of the Government and its contractors and subcontractors. An exception may be allowed where insurance is not available because of a policy exclusion that is determined by the Secretary of Transportation to be usual for the type of insurance involved. In those instances, the Secretary, following consultation with other interested Federal agencies, may waive claims for property damage from the first dollar of loss. In all other circumstances, coverage must be provided to protect U.S. Government property from *any damage* incurred during or as a result of licensed launch activities, regardless of fault, absent willful misconduct by the Government or its agents.

Government Customer

When the licensee's customer is a United States Government agency, the agency is treated the same as any nongovernmental customer for purposes of determining the appropriate amount of property insurance required of the licensee and in terms of the U.S. Government's waiver of claims or property damage or less above the required amount of property insurance under 49 U.S.C. 70112(b)(2). That is, a Government payload is not covered by the required Government property insurance and the United States Government agency-customer accepts responsibility for property damage to the payload. For other purposes, the government agency customer is an agency of the United States involved in licensed activities. This is an important distinction because employees of a U.S. Government agency are third parties and their claims against other launch participants for bodily injury or property damage are covered by the third-party liability policy required under 49 U.S.C. 70112(a)(1)(A), even when the agency that employs them is involved in the launch as the customer. The basis for the Office's distinction is grounded in appropriations law. An agreement on the part of the United States Government to be responsible for claims of its employees for injury or damage from the first dollar of loss, other than employee claims compensated under FECA, would be an unfunded contingent liability which, in the Office's view, is not statutorily sanctioned. Rather, through statutorily-mandated insurance insurance protections, waiver of claims requirements and payment of excess claims provisions, Congress has limited the unfunded contingent liability the U.S. Government may accept. The Office believes its approach to protecting the U.S. Government when it is a customer of commercial launch services providers is consistent with the limit of risk the Government has agreed to accept under the statute.

To summarize the Office's view of the statutory allocation of risk regime, whereas nongovernmental parties involved in licensed launch activities accept responsibility for property damage or loss they sustain and for injury or loss sustained by their employees, the United States Government is covered on both accounts by insurance secured by the licensee. Should the loss exceed the amount of required insurance that a licensee has secured to cover such claims, then the Government assumes responsibility for loss of or damage to its property (and property of its contractors and subcontractors) in accordance with required reciprocal waivers of claims under 49 U.S.C. 70112(b)(2). Should the loss exceed the required insurance a licensee has secured to cover third-party liability, then the Government, in effect, assumes limited responsibility for losses above that amount sustained by Government personnel by agreeing to pay excess third-party claims. At the same time, nongovernmental parties are effectively protected from claims for Government property losses by required insurance and the Government's waiver of claims in excess of insurance; and from third-party claims, including claims of Government personnel, by required liability insurance and by procedures for U.S. Government payment of third-party claims up to $1.5 billion in excess of insurance.

Section-by-Section Analysis

Part 440, Subpart A—Financial Responsibility for Licensed Launch Activities

Section 440.1—Scope; Basis

Proposed § 440.1 identifies the activities to which the Office's proposed financial responsibility and allocation of risk requirements would apply as all commercial space launch activities that are authorized to be carried out under a launch issued by the Office.

Section 440.3—Definition

Section 440.3 defines terms used in part 440 that are not otherwise defined in 14 CFR Ch. III. Terms defined in § 401.5 of the Commercial Space Transportation Licensing Regulations have the same meaning for purposes of this part unless otherwise indicated. Some of the terms, as defined in the proposed regulation, are self-explanatory and required no additional elaboration. Other terms are discussed below.

The term ''contractors and subcontractors'' is defined in this section to address parties intended to be covered by the phrase ''contractors and subcontractors involved in launch services'' in 49 U.S.C. 70112 and 70113. This is important because these contractors and subcontractors have certain responsibilities and enjoy certain benefits under the statute relating specifically to the requirements

for insurance (or other form of financial responsibility), reciprocal waivers of claims and the U.S. Government's payment under certain circumstances of successful third party claims in excess of required liability insurance.

As used in the Act, the term ''contractors and subcontractors'' is generally modified by the phrase, ''involved in launch services.'' The term ''launch services'' is defined by the Act to include ''(A) activities involved in the preparation of a launch vehicle and payload for launch; and (B) the conduct of a launch.'' 49 U.S.C. 70102(5). When this term is coupled with ''contractors and subcontractors'' for purposes of sections 70112 and 70113 of the statute, a literal reading could narrowly limit the group of covered contractors and subcontractors to service providers involved strictly in on-site launch preparatory and support activities. The Office does not believe that this interpretation is consistent with the overall objective of the financial responsibility and payment of excess claims provisions of the statute, which is to ensure financial protection and an equitable sharing of risks among the parties exposed to potentially catastrophic losses from a launch accident. The group of covered parties should not be limited only to the most obvious and visible launch participants that are engaged in preparing the launch vehicle and payload for launch and conducting the launch at the launch range. This group should also encompass, for example, the manufacturer that produces a component part for installation in the launch vehicle or payload, or the supplier that delivers a piece of equipment or other physical object used to prepare for or conduct a launch, as well as the contractor that constructs or refurbishes a launch pad specifically for licensed launch activities. In other words, to the extent a third-party loss is attributable to the direct or direct involvement of contractors or subcontractors who have provided goods or services in connection with licensed launch activities, the required insurance should cover their resulting liability. It is important to note that the statute addresses claims that result from an activity carried out under a license. Third-party claims that do not result from licensed activities are not addressed by the financial responsibility requirements of the statute. For example, third-party claims that arise *during* the manufacture of a component part would not be covered by required insurance.

Accordingly, the term ''contractors and subcontractors'' as set forth in proposed § 440.3 would include all contractors and subcontractors at any tier that participate in or contribute to the conduct of licensed launch activities, including suppliers of property and services and component manufactures of a launch vehicle or payload. The Office requests comments on the practical ability to protect all of these parties through required insurance.

The definition of the term ''customer'' in proposed § 440.3 is intended to respond to concerns that the protections afforded ''the customer'' under the statutory allocation of risk regime be available not only to the party that actually contracts with the commercial launch services provider and prospective licensee, but also to the intended beneficiary or recipient of launch services when the latter party is different from the former. For example, this situation typically arises in the context of ''turnkey'' contracts for on-orbit delivery of a satellite. Under this type of arrangement, the ultimate owner/operator of the satellite contracts with a satellite manufacturer to produce the satellite and secure launch services to deliver the satellite to a prescribed orbit. The satellite manufacturer purchases launch services directly from a commercial launch services provider, and transfers title to the satellite only after successful completion of the launch and on-orbit tests to confirm that the satellite is functioning properly. For this reason, the term ''customers'' also includes a person to whom the procurer of launch services *conditionally* sells, leases, assigns, or otherwise transfers its rights in the payload or a part thereof. Another example is the purchaser of an interest in the satellite, *e.g.*, transponders, from the party that owns the satellite whether that party has purchased launch services directly or has contracted for on-orbit delivery on a ''turnkey'' basis. Another example is the customer who has placed its property on board the payload in order to receive an on-orbit service, such as microgravity experiments. The Office believes that these parties should be viewed as ''customers'' in order to enable U.S. commercial launch services providers to compete with foreign operators, consistent with one of the objectives of the 1988 Amendments. The proposed definition of ''customer'' therefore includes the person who enters into a launch services agreement with the licensee, as well as any person to whom the customer has, conditionally or otherwise, sold, leased, assigned or otherwise transferred any of its rights in the payload to be launched.

The term ''customer'' does not include the ultimate beneficiary of the payload services, as opposed to launch services, because doing so could theoretically include any person who uses a television or makes a long-distance telephone call, and goes beyond the intended scope of the Act.

When the licensee's customer is a U.S. Government agency, it is not intended that the agency be treated any differently from a nongovernmental customer with respect to the payload. Thus, as discussed in greater detail in the accompanying supplementary information under the heading, ''Government Customer,'' and in the analysis of § 440.17 of the proposed regulations, the Government payload is not covered by required Government property insurance and the U.S. Government agency involved accepts responsibility for property damage to the payload. For other purposes, the Government customer is an agency of the United States involved in licensed launch activities and, as such, it is a named insured in required insurance and its employees are deemed third parties.

A definition of the term ''Government personnel'' has been included in proposed § 440.3 for purposes of identifying those employees of the Government and its contractors and subcontractors entitled to protection and coverage by required insurance.

A definition of the term ''hazardous operations'' is included to add clarity to the list of information required by the Office to perform a determination of maximum probable loss. The definition proposed is consistent with the Office's study, ''Hazard Analysis of Commercial Space Transportation,'' prepared in May 1988, and is intended to capture activities that create a potential for an accident that would result in damage or injury.

The term ''liability'' refers to any legal obligation, whether arising under United States, international or foreign law, to pay claims for bodily injury or property damage resulting from licensed launch activities.

The term ''licensed launch activities'' is intended to reflect the activities subject to the Department's authority under the Act to license the launch of a launch vehicle. For purposes of applying the proposed regulations, it focuses specifically on activities authorized to be conducted under a particular license issued by the Office.

The term ''maximum probable loss'' (or MPL) refers to the Office's determination, in the form of a dollar amount, of the greatest potential losses for bodily injury and property damage

that can reasonably be expected to occur as a result of licensed launch activities. The Office determines the value of the maximum probable loss attributable to licensed launch activities by analyzing the known hazards, the consequences (amount of loss), and probability of loss associated with such activities. It does not mean maximum possible loss, that is, a ''worst case'' scenario regardless of likelihood. Rather, assessing maximum probable loss employs risk analysis methodology. The analysis takes into account the characteristics of one or more launches in similar circumstances, the proximity of persons and property on and around the launch site and the likelihood of injury and damage within an established probability threshold. (A more elaborate explanation of the Office's methodology for determining the value of maximum probable loss is provided in the section-by-section analysis accompanying § 440.7.)

Through risk analysis, the Office determines two results: the probability an undesirable event will occur and the consequences (measured as the amount of loss) of that event. The Office then compares these results to a threshold probability of occurrence selected by the Office in order to determine whether the results are reasonable to expect, or probable, and therefore warrant financial protection against their occurrence. Typically, the larger, or more catastrophic, the potential loss or damage, the less likely it is to occur. The threshold probability is the probability value selected by the Office at and below which loss or damage that can be reasonably expected to occur is measured. Loss or damage that has a likelihood of occurring that is equal to or greater than the threshold probability is considered probable. Accordingly, insurance to protect against that amount of damage or loss is required. Loss or damage that has a likelihood of occurring that is less than the threshold probability is not reasonably likely to occur and is therefore considered improbable. Accordingly, insurance to protect against such loss or damage is not required. In summary, maximum probable loss is the dollar value determined by the Office as the upper bound of loss that can reasonably be expected to result from licensed launch activities. Loss or damage exceeding the upper bound would result from events that are so very unlikely as to be unreasonable to expect. That is, they are not sufficiently probable.

Currently, the Office utilizes two different threshold probabilities in determining third-party and Government property maximum probable loss. The threshold probability used for determining third-party MPL, exclusive of Government personnel, is on the order of one in ten million. The threshold probability for determining Government property MPL and third-party MPL for Government personnel is on the order of one in one hundred thousand. The thresholds are defined to accommodate the difficulty of setting precise bounds on risks that, by definition, are somewhat remote.

The Office's selection of on the order of one in ten million as the threshold probability (the probability of occurrence) for determining third-party MPL is based upon the Government's experience in supporting launch activities at Federal ranges. Because of the stringent safety requirements used at Federal range facilities, the general public in the vicinity of the range has little chance of being adversely affected by a launch event. As a result, the likelihood of a third-party casualty resulting from a launch from a Federal range should be no greater than on the order of one in one million. If the Office used one in one million as the threshold probability for determining third-party MPL, no third-party loss would reasonably be expected to occur, the MPL would be zero, and no third-party liability insurance would be required. The Office does not believe that this was the result Congress intended in adopting maximum probable loss as the basis for setting financial responsibility requirements. Accordingly, the Office's view is that the Act requires a reasonable and measurable amount of financial responsibility by licensees and has selected the very low threshold of on the order of one in ten million probability of occurrence as the threshold probability that achieves this result. The MPL determination using this threshold signifies that there is less than on the order of a one in ten million chance that claims for third-party losses would exceed the required amount of insurance. Stated another way, the insurance requirement set by the Office is the maximum magnitude of loss such that there is less than on the order of one in ten million chance of exceeding this amount.

The Office utilizes on the order of one in one hundred thousand as the threshold probability for determining Government property insurance requirements because Federal range facilities, by their very nature and intended purpose, will be exposed to hazardous activities and may suffer some damage. Thus, the Government appropriately accepts greater risk than third parties and the MPL is determined using the higher threshold probability. This assumption of some amount of risk may, in part, account for the lower statutory ceiling on insurance requirements and the Government's waiver of claims for damage above the amount of required insurance. Similarly, Government personnel, including employees of Government contractors and subcontractors, accept greater risk than the general public or other third parties through their exposure to or involvement in hazardous operations. For this reason, the third-party MPL determination includes risks to Government personnel measured at the probability threshold of on the order of one in one hundred thousand, rather than on the order of one in ten million.

In the Office's experience, this approach results in insurance requirements that are reasonable, within the statutory ceiling for required insurance, and adequate to protect U.S. Government interests.

The proposed definition of the term ''third party'' reflects the definition contained in 49 U.S.C. 70102(11). However, the Office's definition of ''third party'' clarifies the statutory definition by expressly including as third parties United States Government personnel, including employees of Government contractors and subcontractors, to the extent that they are directly involved in providing launch support or launch services for licensed launch activities. The purpose of the definition is to ensure that liability insurance, or other form of acceptable financial responsibility, required under § 440.5(b) of the proposed regulations is available to cover the claims of Government personnel, as well as persons not involved in licensed launch activities, who are injured or otherwise sustain a loss as a consequence of those activities. Government personnel who contract personally and directly with a licensee or other nongovernmental launch participant to provide a service are not considered Government personnel for purposes of these regulations when performing that service. In addition, the proposed definition would expressly exclude employees of other launch participants because their claims for injury or loss are not intended to be included in the Office's determination of required third-party liability insurance. Responsibility for employee losses is assumed by each employer under the reciprocal waiver of claims required under § 440.17 of the proposed regulations, and those employee claims are not eligible for payment by the U.S. Government in the event of excess third-party claims.

The term ''United States'' is intended to refer to the United States Government in its entirety and as the collective sum of its various parts.

Section 440.5—General

Although issuance of a license constitutes legal authorization to carry out the activities specified therein, certain conditions must be satisfied for the licensee to proceed with authorized activities.

Section 440.5(a), as proposed, would establish the fundamental requirement that authorization to conduct licensed launch activities pursuant to a license issued by the Office is contingent upon the licensee's demonstration of financial responsibility and compliance with risk allocation requirements as set forth in proposed regulations. In addition to insurance required by this part, a licensee may be required by other agencies of the United States Government to obtain other types of liability or property insurance covering activities involving United States launch property, launch services or personnel. Other insurance requirements may include workers compensation, unemployment insurance, employer's liability, comprehensive automobile liability, environmental liability, or insurance required by Federal, State or local environmental protection laws and regulations. These other insurance requirements are not set forth in license orders issued by the Office; however, licensees are not relieved of the requirement to comply with them.

In addition, as further explained in the section-by-section analysis accompanying § 440.15(b), the financial responsibility requirements prescribed under the proposed regulations would preempt those provisions in agreements between the licensee and the United States, or any agency thereof, involving United States launch property or launch services that address financial responsibility, allocation of risk, and related matters covered by 49 U.S.C. 70112 and 70113. The objective of this preemption is to avoid duplicative requirements, but not to relieve the licensee of contractual or legal obligations intended to address interests other than those served by the statute.

Section 440.5(b) would codify the Office's existing practice of setting the required amount of financial responsibility in license orders. As a procedural matter, the Office has relied on the issuance of license orders to supplement the license and prescribe specific terms, conditions and limitations, including financial responsibility requirements, on a case-by-case basis. Many of these terms and conditions would now be set forth in rules of general applicability. The amount of financial responsibility that must be obtained would continue to be set forth in a license order. The license order would generally be issued concurrently with the license, although there may be circumstances when it would follow issuance of the license. The Office may also revise financial responsibility requirements in a subsequent license order in the event of a change in exposed property or risks affecting the required amount of coverage. In any event, to the extent the license order reflects the Office's determination of maximum probable loss, the timing of its issuance would be subject to the provisions of proposed § 440.7.

Propose § 440.5(c) states the fundamental principle that evidence of financial responsibility provided by the licensee is no substitute for actual financial responsibility of the licensee. In the event the licensee fails to obtain or maintain insurance or financial responsibility in amounts and according to the terms and conditions prescribed, the licensee would bear the risk and be liable for claims resulting from licensed launch activities that would otherwise have been covered. In addition, in the event of a defense raised, or exclusion, to coverage under the policy that relieves the insurer from compensating claims, the licensee would remain responsible for satisfying the claim. The only exception to this fundamental principle provided under the statue is where the Secretary of Transportation specifically determines that an exclusion is usual for the type of insurance involved, and the United States Government agrees to provide for paying claims from the first dollar of loss. As explained in the section-by-section analysis accompanying § 440.19, a policy exclusion would be considered ''usual'' only if insurance covering the excluded risk is not commercially available at reasonable rates. The licensee is required to submit a certification to that effect when demonstrating compliance with financial responsibility requirements. No final determination is made by the Department unless and until an occasion arises when the Department is called upon to prepare a compensation plan covering excluded claims. If it then becomes evident that insurance was, in fact, available at commercially reasonable rates, the Government need not pay claims from the first dollar of loss and the licensee remains responsible for the liability.

Failure by the licensee to comply with these requirements may result in suspension or revocaton of the license and also subjects the licensee to other penalties as provided in section 405.7 of this chapter.

Section 440.7—Determination of Maximum Probable Loss

Section 440.7, as proposed, describes the Office's procedures for assessing and issuing a determination of maximum probable loss (MPL) on which financial responsibility requirements are based. Section 440.7(a) would provide that a determination of maximum probable loss resulting from licensed launch activities forms the basis of the financial responsibility order issued by the Office.

Section 440.7(b) would provide the timing for the Office's issuance of the MPL determination, consistent with the Act. The Act provides that MPL determinations must be made no later than 90 days after a licensee or transferee requires it and has submitted all of the information needed to make a determination. In practice, the Office begins the risk analysis required for the MPL determination during the 180-day license application review period. Doing so enables the Office to issue financial responsibility requirements concurrently with a license so as not to delay commencement of licensed launch activities.

On a very few occasions, the Office has been unable to issue the MPL determination concurrently with the license. This result may occur for several reasons. In order to conduct the analyses, the Office requires from the applicant information described in Appendix I to the proposed regulations and may also request information from Federal range facilities involved in proposed launch activities or exposed to risk of damage or loss as a result of proposed activities. Incomplete information, either from the applicant or from the Federal range facility, can extend the amount of time necessary for the Office to complete and issue the MPL determination. Typically, a delayed determination results from submission by the applicant of incomplete information on which to perform the necessary risk analyses. Until the Office has complete and sufficient information the 90-day period does not begin. A delayed determination as a result of incomplete information is not untimely. In addition, the Act requires that the Office consult with heads of other appropriate Federal agencies in issuing financial responsibility requirements. The Office's practice has been to share its

MPL analyses with affected Federal agencies and request comments within three weeks. The Office's experience has shown that three weeks may not be sufficient for other Federal agencies to complete their reviews and issuance of the MPL determination may necessarily be delayed.

Accordingly, proposed § 440.7(b) would provide that the Office notify a licensee or transferee of any delays in issuing the MPL determination beyond the statutory 90-day period. The Office intends that this provision would be invoked only in circumstances beyond the Office's control, such as protracted consultation with other Federal agencies.

Proposed § 440.7(c) refers to Appendix I to the proposed regulations which prescribes information requirements for issuing a maximum probable loss determination. Appendix I is intended to be a comprehensive list of information requirements, some of which could be waived by the Office if, as a result of consultation with the applicant, the Office finds that the information is not necessary in light of the particular launch proposal. Once information is provided, the person requesting the MPL determination is responsible for reporting any changes that could affect the outcome of the risk analyses.

As provided in proposed § 440.7(d), the Office may amend or adjust its maximum probable loss determination to reflect any new information relevant to an accurate assessment of risk. In lieu of submitting duplicative information, a person requesting a MPL determination who has previously been issued one may certify that there has been no change from information previously submitted. This provision is intended to reduce the regulatory burden on licensees who conduct similar launch activities under separate licenses.

An MPL determination must accompany every license authorizing launch activities and is therefore typically performed in conjunction with the Office's review of a license application. Section 440.7(e) would address the situation in which the Office is requested to issue a determination of maximum probable loss resulting from activities that are *not* the subject of a specific license application. A determination made under this section would not be governed by the 90-day requirement set forth in § 440.7(b).

Methodology for Determining Maximum Probable Loss

The Office derives the value of the maximum probable loss that may result to third parties and Government property from licensed launch activities through case-by-case risk analyses. The Office considers factors ranging from the kinds of hazardous operations, as defined in proposed § 440.9, to be conducted under a license, to the number of third parties that may be exposed to risk in the event of a launch accident. Failure modeling techniques, the Office's experience in preparing numerous MPL determinations, and engineering judgment all play roles in the final determination. A more complete description of the Office's approach to hazard analysis and risk analysis techniques appears in a study, entitled ''Hazard Analysis of Commercial Space Transportation,'' released by the Office in May 1988. A copy may be obtained from the Office upon request. In addition, the Office is preparing a comprehensive description of its procedural methodology for determining maximum probable loss in a separate report to be made available to the public. A brief summary of the Office's approach to determining MPL is presented below to explain the underlying rationale for the information requirements referenced in proposed § 440.7(c) and listed in appendix I to part 440.

In addition to information required from the applicant, the office obtains certain information from the Federal range facility in order to assess properly the value of Government property exposed to risk. This information is not reflected in regulatory requirements. Typically, this information consists of identification of facilities the Federal range facility has authorized for use by the licensee and the value of those facilities, other range facilities that the Federal range facility identifies as exposed to risk as a result of the licensee's proposed launch activities due to their proximity to the licensee's hazardous operations, the number of Government personnel that the Federal range facility believes would be exposed to risk, and range-required risk mitigation measures.

Much of the information required to complete the MPL determination is provided as part of the application to conduct a launch. However, because any person can request a maximum probable loss determination at any time, information requirements for obtaining a determination are included as part of this proposed regulation. The proposed information requirements are not intended to place an additional or duplicative burden on prospective licensees and can be satisfied by specific reference to the license application.

Appendix I describes the full range of information required from an applicant to complete the MPL determination. In certain circumstances, not all of the information would be required and the Office will advise the applicant accordingly during pre-application consultation. For example, where a launch from an isolated location would not expose any identifiable Government property to risk, the Office would waive those information requirements directed at assessing risk to Federal range facility assets. A launch proposal may involve vehicles and risks similar to those previously considered by the Office and the Office may waive information requirements it believes would be unnecessary or duplicative in light of existing analyses. Where the Office can determine, on the basis of the launch proposal, that certain risks need not be considered in order to calculate MPL, the Office will waive the requirements that pertain to those risks.

The complexity of the MPL analysis will depend upon the risks that attend a specific launch proposal. At its most complicated, a complex launch vehicle involving hazardous operations and flight paths that expose people and property on and off-range to risk, the Office is able to employ a variety of risk analysis tools, such as computer models that estimate impact probabilities, potential property damage and casualty expectations. For all proposals, government property and third-part losses are considered in separate MPL analyses.

The Office's objective is to determine the value of the maximum magnitude of loss that is sufficiently probable to warrant financial responsibility protection. That is, within the stated probability thresholds, as defined in proposed § 440.3, the Office must establish a maximum value of loss. By corollary, the maximum magnitude of loss within the probability threshold drives the MPL value. This means that the Office need not consider every single accident scenario that falls within the threshold probability. Those having relatively minimal damage consequences need not be individually considered. Rather, the office's focus is on finding the maximum value of loss that would result from an accident that is within the specified threshold probability of occurrence. The Office does so by identifying specifically the hazardous activities to be conducted under a license, Government and third-party property placed at risk by those activities, and the number of third parties placed at risk. Then, the Office identifies a range of accident or failure scenarios and estimates the probability

of occurrence for each scenario. The Office then estimates the value of loss for various accident scenarios.

The Office utilizes several methodologies, in order of preference, to estimate the probability of occurrence of the different scenarios. The order of preference begins with actual experience or existing models, and descends to expert probability analysis as the second best alternative, followed by professional engineering judgment.

Estimating the value of loss for each accident scenario is done similarly, using different methodologies in an order of preference. Actual experience is most reliable and is used wherever it exists and is directly applicable to a launch proposal. For pre-flight licensed launch activities, the Office uses estimates that are informed by facility damage tables developed for the Federal range facilities, building design specifications, and engineering judgment. Computer models, such as the Facility Damage and Personnel Injury (DAMP) programs, may be used to estimate damage during and immediately following vehicle life-off. For third-party casualties, the Office develops an Expectation of Casualty figure for off-range population and Government personnel at risk.

As noted above, low loss scenarios need not be considered unless a possible accident scenario involves losses that, when combined, may be significant in determining the value of the maximum probable loss. However, in many instances, accident scenarios are mutually exclusive. For example, a pre-flight accident that destroys the launch vehicle means there will be no launch, and there is no need to aggregate the damage from a pre-flight accident of this nature and a post-launch accident in determining the maximum value of loss.

In summary, the Office performs a detailed estimate of property damage and casualties for the different accident scenarios that fall within the threshold probability of occurrence in order to determine the maximum value of loss. The MPL value becomes the amount associated with the most costly accident scenario falling within the threshold probability of occurrence.

Government Property

The Office's maximum probable loss determination for Government property damage takes into account U.S. Government property situated on a Federal range facility, wherever located. As noted above in the Supplementary Information, the Office includes as part of its determination Government range assets on adjacent Federal range facilities that are exposed to risk of damage or loss as a result of licensed launch activities.

The Office historically has not considered temporarily placed or ''transient'' Government property, including launch vehicles and payloads, in calculating the maximum probable loss determination. The Office bases its approach on several considerations. First, the Federal range facility is responsible for maintaining a schedule of launch activities. The Government is therefore aware of upcoming commercial launch activities and, by exposing its transient or movable property to the possibility of damage or loss due to commercial launch activities, accepts certain risks. Second, readily movable property may no longer be present at the time the licensee ultimately conducts licensed launch activities. If that property were included in the MPL determination, the licensee may be unfairly burdened with too great an insurance requirement. One alternative would be to adjust, either upward or downward, the amount of property insurance that would be required just prior to commencing licensed activities. This approach is arguably contemplated by the statue, which provides for the Secretary to amend the maximum probable loss determination when new information so warrants. However, last minute adjustments to the MPL determination due to the Government's action of placing its property at risk, could prove administratively burdensome for both the Office and the licensee, whose launch could be delayed by having to demonstrate additional financial responsibility due to last minute changes in requirements. Third, including transient or Government property temporarily located on the Federal range, such as launch vehicles and payloads, could readily drive the MPL value above the $100 million statutory ceiling for required insurance. Although the Act contains provisions whereby the Department is directed to review annually the statutory ceilings on required insurance and report to Congress proposed adjustments to conform with changed liability expectations and the insurance market, the Office views the $100 million statutory ceiling on the Government property insurance requirement as a clear indication that Congress did not intend for these Government assets, which typically cost in excess of $100 million *each*, to be included as part of the range assets on which the MPL determination is based.

The Office makes an important distinction between transient, movable property that is not included in the MPL determination and property that has been placed in a storage facility on the Federal range. The latter is included in the MPL determination. The rationale for the Office's distinction is that certain facilities are intended, by design, to house Government property on a temporary or long-term basis. However, where Government property has been stored in a facility not designed or intended for storage, thereby exposing the property to additional risk, the Office believes it would be unreasonable to impose the cost of this additional risk on the licensee. The Office therefore excludes the stored property from its MPL determination. In addition, to the extent this stored property, such as rocket motors or explosives, may contribute to the possible extent of damage to Government facilities, the Office does not factor the additional losses that may be attributed to that property in determining the MPL value.

In taking the approach of excluding certain transient, movable Government property, the Office is aware that failure to include it could expose the Government to greater risk of loss. However, the Office believes that its approach reflects the intent underlying the comparatively low statutory ceiling on the Government property insurance requirement, and is reasonable in light of the Government's assumption of risk in placing property on the Federal range facility in a manner that exposes it to damage or loss from commercial launch activities. For these reasons, the Office believes that its approach is the better one. Nevertheless, it is important to bear in mind that, whether or not the value of certain property is included in making the MPL determination, damage or loss to any Government property, whether fixed or movable, located on the Federal range facility must be *covered* by the insurance policy the licensee obtains under 49 U.S.C. 70112(a)(1)(B). Comments are requested on the Office's approach to considering non-fixed Government property in determining Government property insurance requirements.

Current Replacement Value

In determining maximum probable lose for Government property, the Office bases its findings on the current replacement value of the property. The notion of current replacement value takes into account the current use and function of a Government facility, not its originally intended use. For example, the current replacement value for a facility that was originally built to support engineering operations but is no longer needed for that purpose and is

now used as an excess storage facility would most likely be lower than its original construction cost, even if a launch accident meant its total loss. The Office's rationale is that the cost of restoring property to its original use when the Government itself has chosen not to maintain the property in its original condition imposes an unfair cost on the licensee. The reverse situation may also occur, whereby restoring property to its current use may cost more than restoring it to its original use. This could occur where property has been up-graded or modified to support another purpose than originally intended. In that event, the Office believes that it is fair and appropriate to require insurance that covers the maximum probable loss to the property's current value, up to the statutory ceiling. In all circumstances, the Office consults with Federal range authorities in valuing Government property.

Third-Party Property Damage

Under the proposed regulations, third-party property includes all property owned by persons or entities other than the licensee and its customer, and the contractors, subcontractors, and employees of each, involved in licensed launch activities, the Government's contractors and subcontractors involved in licensed launch activities, and the Government (except for property located on a Federal range facility). It includes the personal property belonging to Government personnel involved in licensed launch activities, and all off-range private and public property other than property on nearby or adjacent Federal range facilities for which Government property insurance coverage is required.

The risk analysis performed to determine the value of third-party property maximum probable loss utilizes three approaches to estimating property values: (1) Specific determinations, (2) averaging, and (3) setting an upper bound or ceiling. The Office selects the appropriate methodology to use on a case-by-case basis, taking into account such factors as the availability of information, the launch site, and the range of risks to third parties presented by a particular launch proposal. The Office may use all three methods of estimating third-party property losses in one MPL determining, depending upon the type and amount of property exposed to loss or damage as a result of licensed launch activities. In all instances, the Office utilizes a conservative approach to ensure the adequacy and sufficiency of its MPL determination and third-party liability financial responsibility requirement.

The first estimation methodology, specific determinations, entails obtaining actual property values and determining the likelihood and consequences of an accident affecting that property. This method is typically used for very high-value property in the area that would be most exposed to risk. The second method, averaging, can be accomplished in several ways. One way is to average estimated property values in a homogeneous area through such means as county or city tax assessment records. Another is to assume that an accident will occur in the high-value part of the risk area and determine the average of the high-value property exposed to risk. This conservative approach assures that the MPL determination will be sufficient to cover losses to this high-value property. The third method, setting an upper bound, also yields a conservative result. This approach utilizes the Office's experience by considering the nature and size of the area exposed to risk, *e.g.*, urban, suburban, rural, industrial, farm, or some combination, and comparing it to third-party property considered at risk in past MPL analyses and to know values of Government property placed at risk. Setting an upper bound involves a qualitative assessment of the value of third-party property at risk and is based on the Office's extensive experience in assessing risk.

Third-Party Casualties

The Office must also consider third-party casualties in determining maximum probable loss to third parties. Doing so requires an analysis of the number of persons exposed to risk and assigning a value of life. Department guidance issued in 1993 for preparing economic evaluations suggests using $2.5 million as the value of life in estimating one's willingness to pay for safety measures in order to reduce one's probability of death. However, the Office is mindful of the distinction between the value of life used for purposes of estimating the cost of safety requirements in regulations and for seeking damages in civil litigation. Accordingly, the Office utilizes the somewhat higher figure of three million dollars as the value of a life to assure a conservative, but reasonable, result.

The Office requests comments on the appropriate means of assessing the value of third-party property and the value of life for purposes of determining maximum probable loss to third parties. In their comments, commenters are requested to consider the impact on insurance requirements that could result from a change in methodology.

Section 440.9—Insurance Requirements for Licensed Launch Activities

This section would establish in a regulation financial responsibility requirements in the form of insurance as a condition of every license issued by the Office authorizing commercial space launch activities. A licensee would also be allowed to demonstrate an equivalent amount of financial responsibility through means other than insurance.

Proposed § 440.9(b) would establish the requirement that a licensee obtain a policy of liability insurance to pay claims of third parties for bodily injury or property damage resulting from licensed launch activities. In accordance with 49 U.S.C. 70112(a)(4), the parties protected under the insurance policy as insureds, or additional insureds, are the United States, its agencies, and its contractors and subcontractors, and their respective personnel, involved in licensed launch activities; and the licensee, the customer, and their respective contractors and subcontractors involved in licensed launch activities. Because Government personnel, as defined in proposed § 440.3, are included within the proposed definition of ''third party,'' Government personnel may be both third-party claimants whose claims are compensable by required liability insurance, as well as additional insureds.

Under proposed § 440.9(c), the amount of required insurance is based on the Office's determination of maximum probable loss from third-party claims resulting from licensed launch activities. As provided by statute, the amount of coverage required by the Office may not exceed $500 million, or the maximum liability insurance available on the world market at reasonable cost. It should be noted that the maximum limit on insurance applies to the aggregate of claims for any particular launch, as provided by 49 U.S.C. 70112(a)(3). A policy may cover more than one launch. However, the amount of insurance prescribed by the Office in a license order must be available to cover the total of third-party claims resulting from each launch event. For example, if a licensee intends to conduct a series of launches under an operator license and third-party claims resulting from the first launch are compensated by the liability policy, the amount of coverage for each succeeding launch must be the amount required by the license order. Coverage may not be reduced by the amount of claims paid

as a result of previous launch activities conducted under the same license.

Section 440.9(d) would establish in a regulation the requirement that a licensee must obtain a policy of insurance to compensate for damage to or loss of property at a Federal range facility that is owned, leased or occupied by, or in the care, custody or control of, the United States, its agencies, and its contractors and subcontractors involved in licensed launch activities, that results from licensed launch activities. The maximum probable loss determination to support this requirement focuses on valuable national assets located at Federal range facilities that are put at greatest risk by licensed activities; however, all Government property (and that of its agencies, contractors and subcontractors involved in licensed launch activities) at a Federal range facility must be protected. This would include Government range facilities surrounding or adjacent to the proposed launch site. The Office's experience in administering financial responsibility requirements to protect Government property has been previously described in the supplementary information accompanying this proposal under the heading, ''Property Protection for Government Launch Participants.'' The Office does not object to any reasonable approach on the part of a licensee that is taken to meet this requirement as long as the ultimate objective is achieved, that is, providing for the compensation of property damage sustained at Federal range facilities by the United States, its agencies, contractors and subcontractors involved in licensed launch activities, resulting from activities carried out under a license. However, the Office believes that, at a minimum, naming the U.S. Government and its agencies, contractors and subcontractors, involved in licensed launch activities, as additional insureds is necessary to accomplish this objective. Comments are requested on whether the Government should also be named the loss payee and be responsible for administering payment of insurance proceeds to its contractors and subcontractors.

Under proposed § 440.9(e), the amount of required insurance would be based on the Office's determination of maximum probable loss attributable to property damage claims of the United States, its agencies involved in launch services, and its contractors and subcontractors involved in licensed launch activities; however, the amount would not exceed $100 million. As noted in the analysis accompanying proposed § 440.9(c), the maximum limit on insurance applies to the aggregate of claims for any particular launch. Covered claims are those against a person, including Government employees, for damage or loss to Government property, including the property of Government contractors and subcontractors, resulting from licensed launch activities. In this respect, the named insureds are different from those on the liability policy.

Section 440.9(f) would provide that, in lieu of obtaining policies of insurance, the licensee may demonstrate financial responsibility in an alternative form—such as insurance purchased from a risk retention group authorized under the Risk Retention Amendments of 1986, surety bonds, letters of credit, or some combination—that reflects substantially the same terms and conditions of the requirements set forth in these regulations. Whatever the form of financial responsibility proposed in lieu of insurance, the licensee must demonstrate that it meets the requirements for financial responsibility.

Section 6 of the 1988 Amendments to the Commercial Space Launch Act provides special incentives to certain satellites affected by National Security Decision Directive 254. This directive, issued by President Reagan in August 1986, following the Challenger accident, essentially ended NASA's role in launching commercial and foreign satellites. Section 6 of the 1988 Amendments provides that if certain eligibility criteria are met, the requirement that the licensee obtain property insurance covering loss of or damage to United States Government property does not apply. The Office believes that there are no remaining ''eligible satellites'' that have not been launched or otherwise accounted for and no provision is made in the proposed rulemaking to cover them. Comments are requested as to whether this provision may be properly omitted in final regulations.

Section 440.11—Duration of Coverage; Modifications

Proposed § 440.11(a) would specify when financial responsibility must be in place. Section 440.11(a), as proposed, would provide that required insurance coverage or other form of financial responsibility must attach upon commencement of licensed launch activities, and remain in full force and effect until the later of: (i) The completion of licensed launch activities, as defined by the Office in a regulation, or (ii) until risk resulting from licensed launch activities to third parties and Government property is sufficiently small, as determined by the Office through the risk analysis conducted to determine maximum probable loss, that financial responsibility is no longer necessary. The duration of financial responsibility requirements for a particular launch is specified by the Office in a license order.

The statutory requirement for a licensee to obtain insurance or otherwise demonstrate financial responsibility refers to providing compensation for claims ''resulting from an activity carried out under the license.'' 49 U.S.C. 70112(a)(1). Based upon this language, the Office's view is that insurance requirements attach upon commencement of licensed launch activities but do not necessarily cease upon completion of a licensed launch, defined for orbital launches as the point when any remaining fuel is emptied from the upper stage, the vehicle tank is vented and otherwise ''safed,'' and the upper stage is no longer subject to the operator's control. Hazard analyses performed by the Office to determine maximum probable loss have shown that the greatest exposure for which insurance is typically required exists at the time of lift-off and flight, and that there is virtually no quantifiable risk to third parties or to United States Government property after completion of a nominal launch. The Office has found that thirty days is an appropriate amount of time in which to determine whether an orbital launch has been nominal or whether an anomaly has occurred that could affect risks to third parties or the Government. For this reason, historically, the Office has provided in license orders applicable to orbital launches that insurance coverage is required to attach upon commencement of licensed activities and remain in force ''for a period of thirty (30) days following payload insertion into orbit.'' For suborbital launches, insurance has been required to be maintained at least until motor impact and payload recovery. However, in the event of a launch anomaly, the Office may amend the license order to require that the licensee maintain insurance until the Office determines that risks to third parties and Government property are sufficiently small that insurance is no longer needed.

When the licensee is no longer required to maintain insurance under the license, both the Government's waiver of excess property damage claims under § 440.17(c), and the Government payment of excess third-party claims provisions under § 440.19, would apply from the first dollar of loss. However, it is important to note that the

Act requires that the third-party claim result from the licensed activity in order for the Government payment of excess third-party claims provision to apply. When that nexus no longer exists, neither does the Government's acceptance of the risk of such claims. In every instance, a factual determination would be required as to whether a sufficient nexus exists between the licensed activity and the third-party claim. In terms of business planning, it has been the Office's experience that for nominal launches, licensees may procure insurance for periods of time in excess of thirty days in accordance with individual risk management practices because the premium rate difference to cover any additional period of time tends to be negligible.

As noted in the preceding Supplementary Information, questions have arisen over time with respect to the appropriate scope of a license authorizing pre- and post-flight ground operations and associated requirements for insurance coverage. As to pre-flight activities, the Office intends to address the question of the appropriate scope of a license authorizing launch activities in a separate rulemaking. With respect to post-launch ground operations, the Office believes that damage to Government property or property of Government contractors and subcontractors, as well as to third parties, could occur during clean-up and from removal of launch-related equipment and material and that insurance should remain in place to protect against such claims. In this regard, it is significant to note that the Act requires financial responsibility to protect against claims ''*resulting from* an activity carried out under license'' (emphasis supplied) (49 U.S.C. 70112(a)(1)). Comments are requested on the proposed duration of required insurance with respect to ground operations, including clean-up and removal of launch-related equipment from the launch site. Comments are also requested on the extent to which insurance should be required to compensate claims of third-parties and the Government for short-term environmental damage, or alternatively, whether clean-up or short-term environmental damage to Government property should be charged to the licensee as a direct cost.

The Office is also requesting comments on the extent to which insurance to protect against claims for long-term environmental or property damage should be required, its availability, and mechanisms for assuring adequate coverage has been obtained. The Office is aware that long-term environmental damage risks are typically excluded from launch insurance coverage because of, among other things, the difficulties of insuring against claims that may not arise until long after the risk period (generally launch plus a number of days) is concluded. Commenters should address whether such claims should be included in determining maximum probable loss for licensed launch activities and whether the existing statutory ceilings are adequate if such claims are included. In considering the issue, commenters are requested to suggest mechanisms for ensuring that funds are available to address long-term environmental damage that results from commercial launch activities. Commenters are also requested to address whether and the extent to which insurance to protect against property damage that results from orbital debris long after a launch has been completed should be required.

Section 440.11(b), as proposed, would provide that the licensee may not replace, cancel, change or withdraw the insurance or other form of financial responsibility required, or in any way modify it to reduce the limits of liability or the extent of coverage, and that any form of financial responsibility may not be permitted to expire prior to the time specified by the Office in a license order, unless the Office is notified in advance and expressly approves of the modification. The purpose of this requirement is to ensure that the licensee has adequate coverage in place that meets the requirements of the applicable license order.

Section 440.13—Standard Conditions of Coverage

Proposed § 440.13(a) identifies the terms and conditions that must be included in any insurance policy obtained to satisfy the requirements of proposed § 440.9. With some modification, the proposed terms and conditions of insurance coverage have been required by the Office in license orders issued on a case-by-case basis in order to carry out the office's responsibilities under the statute, and to the Office's knowledge, have not been difficult to obtain.

Section 440.13(a)(1) would provide in a regulation that any required policy of insurance must provide that bankruptcy or insolvency of the insured (licensee) or any additional insured does not relieve the insurer of any of its obligations under the policy. This requirement is commonly found in liability insurance policies. Its presence is desirable because under common law, if an insurance agreement were construed as only an agreement to indemnify against loss, under certain circumstances the insurer could avoid payment of third-party claims altogether where the insured was declared insolvent. This condition is intended to remove any doubt that the policy insures against liability to pay damages and is not merely an agreement to indemnify against loss.

Section 440.13(a)(2), as proposed, would provide that the policy limits for any required insurance policy apply separately to each occurrence and in the aggregate with respect to claims resulting from licensed activities associated with a particular launch. This provision would further the intent of 49 U.S.C. 70112(a)(3), which prescribes insurance ceilings applicable to ''the total claims related to one launch, * * *'' As noted above, where insurance is obtained by a licensee for a number of launches under an operator license, the limits of the policy must be available for each licensed launch and may not be reduced due to claims resulting from a prior occurrence.

Proposed § 440.13(a)(3) would state that any required policy of insurance must provide for the payment of claims from the first dollar of loss, without regard to any deductible, to the policy limits, except in the limited circumstances allowed in the regulation. The Office discourages the use of a deductible because of the clear statutory mandate to ensure comprehensive protection for all insureds from liability for third-party claims and prompt restoration of United States range assets. If this coverage entails additional cost to the licensee, it is not unreasonable relative to the policy objectives underlying the statute. Risk retention arrangements between the licensee and its insurer may be used as a means of reducing the policy premium.

Nevertheless, the Office understands that licensees may desire a small deductible amount from their coverage in order to reduce policy premiums and the Office has included a provision in the proposal that would allow the reasonable use of deductible amounts. However, to ensure that statutory objectives are achieved, a deductible would be allowed only if the amount of the deductible is placed in a an escrow account established to cover claims resulting from licensed launch activities or if the licensee can demonstrate to the office that it has that amount readily available to it, with no prior liens or obligations on the funds. The Office believes that use of a deductible is appropriate only for comparatively small sums and should not be used as a means of avoiding insurance.

Comments are requested on whether the proposed approach is reasonable. Where Government property is concerned, commenters should bear in mind the objective that proceeds must be made immediately available to restore Government property to its prior condition and use, and that any delays (*e.g.*, in the event assets must be liquidated to pay claims) would be counter to the statute. The Government may also be exposed to claims by its contractors and subcontractors for their property damage where insurance proceeds are not immediately available to cover those loses. Any inability to obtain promptly full payment of such claims could expose the Government to administrative and legal expenses the Government seeks to avoid through required insurance.

Section 440.13(a)(4), as proposed, limits the defenses available to the insurer to avoid paying claims under the policy. It states that a required policy of insurance must provide that the actions of the insured or any additional insured shall not result in invalidation of the policy; however, an insured or additional insured itself may be denied coverage under a policy for claims against it in the event of any breach or violation by it of any warranties, declarations, or conditions contained in the policy. Action by the insured includes nonpayment of the policy premium. Thus, although the Office views the licensee as ultimately responsible for paying additional insureds under the policy as a result of the licensee's nonpayment of the premium.

As a general rule, liability and property insurance policies issued by insurance underwriters contain certain standard exclusions of coverage as well as particular exclusion depending on the activities for which insurance is sought. Proposed § 440.13(a)(5) acknowledges that the insurance policies required under § 440.9 may contain certain exclusion from coverage. Those exclusion must be specified.

In the event of a claim for property damage or bodily injury that is not covered by insurance, the liability for such damage and injury would ordinarily fall on the licensee or additional insured in the absence of some form of indemnification. The Secretary of Transportation is empowered, under 49 U.S.C. 70113(a)(2), to provide for payment of third-party claims that are the subject of insurance policy exclusions that ''are usual for the type of insurance involved'' and for which insurance is therefore not available to cover the claim. 49 U.S.C. 70113(a)(2). In addition, under 49 U.S.C. 70112(b)(2), the Secretary may, following interagency consultation, waive claims for property damage not covered by required property insurance by reason of exclusions that are ''usual for the type of insurance involved'' such that insurance is not available. 49 U.S.C. 70112(b)(2). As a result, a claim that is not compensated by insurance because it falls within an insurance exclusion determined by the Office to be usual would essentially permit first-dollar payment by the United States Government without regard to the thresholds provided, respectively, in 49 U.S.C. 70113(a)(1) and 70112(b)(2).

However, in determining what may be considered usual exclusions for the type of insurance involved, the Office is necessarily mindful of the direction from Congress that first-dollar payments by the United States for such exclusions should not be an inducement for insurers to begin restricting the scope of coverage in their insurance contracts with licensees. Moreover, payments for claims excluded from third-party liability coverage, like payments generally of third-party claims in excess of required insurance under 49 U.S.C. 70113, are subject to certain conditions including Congressional approval of a compensation plan and appropriation of funds.

There are no identical exclusions found in each and every policy. Variations exist among U.S., London, continental European and other overseas insurance markets. Moreover, exclusions may be added by an insurer depending on the particular market and types of risks involved, or can often be ''bought out'' by an endorsement or by a separate policy. Also, exclusions may be added or existing exclusions modified as a result of judicial interpretations the insurance market neither intended nor anticipated in setting its premium rates. Based on insurance market conditions and loss experience, future exclusions may vary from customary or usual exclusions today. Consequently, the proposed regulations define a usual exclusion as one for which coverage is not commercially available at reasonable rates. Licensees must certify at the time they demonstrate compliance with insurance requirements that insurance covering the excluded risks is unavailable at reasonable rates in order for the United States Government to provide for payment of claims from the first dollar of loss. However, the licensee's certification does not finally resolve that a particular exclusion will be deemed to be ''usual.'' That is, in the event the Office determines that insurance was available at reasonable rates the Secretary need not provide for payment of claims from the first dollar of loss. Comments are requested on other appropriate criteria for determining whether an exclusion may be considered ''usual.''

Proposed §§ 440.13(a)(6)–416.13(a)(8) would prescribe, in regulations, additional insurance requirements that have been customarily imposed by the Office in license orders in carrying out its statutory mandate.

Comments are requested on any other terms and conditions that would be appropriate to require in rules of general applicability.

Section 440.15—Demonstration of Compliance

As proposed, § 440.15(a) would require the licensee to demonstrate that it has complied with the insurance and allocation of risk requirements under the proposed regulations no later than thirty days before commencing licensed launch activities. However, a license order may require a licensee to demonstrate compliance in less than thirty days where the license or license order is issued less than thirty days before the licensee intends to commence licensed launch activities. It is strongly recommended that licensees submit required documentation demonstrating compliance with these requirements well in advance of the thirty-day period to ensure that the Office has adequate opportunity to review the submission and confirm compliance by the time the licensee wishes to commence licensed activities. It has been the Office's experience that thirty days is a reasonable length of time to address any issues that arise as a result of the licensee's submission. Where a licensee uses a form of financial responsibility other than insurance to demonstrate compliance, the Office require sixty days to review the submission and ensure its sufficiency.

Section 440.15(b) would establish in a regulation that once the licensee has fully demonstrated compliance with part 440 financial responsibility and allocation of risk requirements, these requirements preempt any conflicting or inconsistent requirements in any agreements the licensee may have previously entered into with other agencies of the United States concerning access to or use of United States launch property or launch services. This express preemption is necessary because there has been a significant amount of confusion in the past concerning the effect of similar or additional insurance requirements imposed by agreements governing

access to United States launch facilities. As stated above in the section-by-section analysis accompanying § 440.5(c), the object of this preemption is to avoid imposing duplicative and inconsistent obligations on the licensee, but not to relieve the licensee of contractual or legal obligations intended to address interests other than those served by the statute. The Office evidences its determination that a licensee has fully complied with part 440 requirements in a letter issued to the licensee.

Under the proposal § 440.15(c) would establish requirements for a licensee to provide the Office with proof of insurance. It is extremely important for the Office to secure adequate assurance that the licensee has obtained the insurance required under the regulations. However, the Office believes that it is unnecessary and impractical to review each policy constituting part of an insurance submission to ensure compliance. Accordingly, proposed § 440.15(c) and (d) would provide for certain certifications and representations from the licensee and its insurer, respectively. The licensee must certify that it has obtained insurance in conformance with the part 440 regulations and the applicable license order. In addition, the licensee must file with the Office one or more certificates of insurance evidencing coverage, as prescribed by the Office, under currently effective and properly endorsed policies applicable to licensed launch activities. A certificate of insurance must specify any policy exclusions or limitations in detail, in accordance with proposed § 440.13(a)(5a). In addition, the licensee would be required to certify that insurance is not commercially available at reasonable rates in order for the exclusion to be found usual for the type of insurance and the United States Government to provide for payment of claims from the first dollar of loss. The licensee would also be required to submit duly executed waiver of claims agreements, signed by the licensee and its customer. The licensee's certifications must be signed by a duly authorized officer of the licensee and may be submitted in one document.

Section 440.15(d), as proposed, would specify certain insurance certificate requirements. Each certificate of insurance must be signed by the insurer and accompanied by a signed opinion of the insurer stating that the policy obtained by the licensee complies with the requirements set forth in part 440.

Section 440.15(e) would further require the licensee to maintain, and make available for inspection by the Office upon request, all required policies of insurance and other documents necessary to demonstrate compliance with part 440 requirements. Although this section essentially imposes a mandatory recordkeeping requirement upon the licensee, the Office believes that the maintenance and administration of these records by the licensee is consistent with the Office's regulatory authority to monitor compliance with the license. Moreover, it is considerably less burdensome and time-consuming for both the Office and the licensee than requiring submittal of all the policy documents to the Office.

Proposed § 440.15(f) recognizes that the licensee may propose to satisfy financial responsibility requirements in a form other than insurance. A licensee may do so, provided it otherwise satisfies regulatory requirements. In practice, licensees have furnished insurance in order to meet the financial responsibility requirements prescribed by the Office pursuant to the statue. Under existing insurance market conditions, third-party liability insurance is obtainable to prescribed limits at reasonable cost. A presentation by the Risk Management Working Group of the COMSTAC at its meeting on May 18, 1995, projected market capacity as sufficient to satisfy launch insurance demand in 1995. In addition, property insurance, where required, may be accommodated within the licensee's existing property and casualty insurance program and is therefore easily obtained.

While the Act does state that a licensee may demonstrate financial responsibility in a form other than insurance, it does not specify what other forms of financial responsibility would be acceptable. A number of alternatives are possible and the Office necessarily will examine any proposal for demonstrating financial responsibility through alternative means on a case-by-case basis to determine whether it otherwise satisfies the requirements for demonstrating financial responsibility.

Section 440.17—Reciprocal Waiver of Claims Requirements

This section, as proposed, establishes requirements for reciprocal waivers of claims among launch participants. These requirements are additional conditions of a license.

Proposed § 440.17(b) would implement 49 U.S.C. 70112(b)(1), which requires the licensee to implement reciprocal waivers of claims with its contractors and subcontractors, its customers, and the contractors and subcontractors of its customer, whereby each party agrees to be responsible for loss or damage it sustains. Parties to a waiver of claims agreement waive two types of claims: Claims for their own property damage, and claims they may have against another launch participant as a result of losses for property damage or bodily injury sustained by their employees, resulting from licensed launch activities.

49 U.S.C. 70112(b)(2) requires the Secretary of Transportation, for the United States, its agencies involved in licensed launch activities, and its contractors and subcontractors, to enter into reciprocal waivers of claims with the licensee, its customer, and their respective contractors and subcontractors involved in launch services. In the Office's view, the purpose of this provision is to establish the Government's waiver of claims against the private sector launch participants and acceptance of responsibility for property damage that exceeds the level of Government property insurance obtained by the licensee under 49 U.S.C. 70112(a)(1)(B).

The approach taken in proposed § 440.17(c), of requiring a formal three-party agreement among the United States, the licensee and its customer, deviates from the form suggested by a literal reading of the Act. However, the Office believes that this approach is the most desirable and efficient one to effectuate the overall purpose of the statutory reciprocal waiver of claims requirements: To limit the universe of potential claims that could arise out of licensed launch activities, and to eliminate the need for each participant in licensed launch activities to obtain separate liability insurance protection against such claims. This approach has also proved manageable for the launch services industry in executing agreements with customers and the U.S. Government.

Section 440.17(c), as proposed, would require that the licensee, its customer and the Department of Transportation on behalf of the U.S. Government enter into a three-party agreement as set forth in appendix II to part 440. The form of the Agreement for Waiver of Claims and Assumption of Responsibility (Agreement) presented in Appendix II deviates from the current practice of the Office and is intended to clarify the scope of the waiver that the United States provides when it is involved in licensed launch activities, and the waiver it requires in return. Simply put, the Department of Transportation, on behalf of the United States, its agencies involved in licensed launch activities, and its contractors and subcontractors, would agree to waive claims against the

licensee, its customer and the contractors and subcontractors of the licensee and its customer, and accept responsibility for losses to property of the Government launch participants, only to the extent that such claims exceed the level of insurance the licensee must obtain under § 440.9(d). As a reciprocal undertaking, the licensee and its customer each would waive claims against the other party and the United States and its agencies involved in licensed launch activities, and against the contractors and subcontractors of each of those parties, and accept responsibility for damage to its own property and losses sustained by its own employees, respectively.

Whereas other parties to the three-party reciprocal waiver of claims agreement would agree to waive and accept responsibility for claims for property damage or bodily injury sustained by its employees, the U.S. Government need not do so. Because Government personnel are third parties, their claims for bodily injury or property damage would be compensated by the third-party liability insurance the licensee is required to obtain. Claims in excess of required insurance would become eligible for payment by the Government under the payment of excess claims provisions of the statute. 49 U.S.C. 70113. Although the approach reflected in the proposed form of Agreement is not currently reflected in existing license orders, the Office believes it more accurately reflects the allocation of risks intended by the statute and correctly responds to the Government's inability under appropriations law to accede to unfunded contingent liability, unless so authorized.

In addition, under the proposed from of the Agreement, the licensee and its customer would further agree to extend, or flow down, the waiver obligations to their respective contractors and subcontractors, and all three principals to the Agreement—including the Department—would agree to indemnify the other parties from claims by their contractors and subcontractors arising out of the indemnifying party's failure properly to implement or extend the waiver.

One launch company has objected to the indemnification provisions required under the three-party reciprocal waiver of claims agreement currently employed by the Office and included in this proposal for all interparty waiver of claims agreements. In the launch company's view, this provision is not required by statute and adds liability and risk over and above that imposed by a breach of contract remedy, which the launch company believes would be the appropriate remedy for failure to flow down the cross-waiver requirement.

The Office's view is that a contractual undertaking to indemnify another party for one's own failure to implement properly the agreements flow-down requirements is preferable. It would provide a strong incentive for parties to be attentive to the flow-down requirement. This is significant because of the limitation on the Office's ability to monitor each licensee's and customer's cross-waivers with their myriad contractors and subcontractors. It would also provide a ready remedy for parties who sustain loss because of another party's failure to flow down the cross-waiver requirement.

In those situations where the licensee's customer is a Government agency, the provisions applicable to the customer are the same as those for an agency involved in licensed launch activities for purposes of the reciprocal waiver of claims requirement. However, because the Government property insurance requirement does not cover the Government payload, the Government waives claims for property damage and assumes responsibility for damage or loss to the payload from the first dollar of loss.

Some concern has been expressed within the commercial space launch industry over the assumption of responsibility for employee losses required of signatories to the waiver of claims agreement. In the Office's view, this is a risk that can be effectively managed without imposing unreasonable economic burdens on launch participants.

The assumption of responsibility by nongovernmental launch participants for their own employees' losses represents a mutual undertaking by each entity to cover losses of its employees. Although employees of nongovernmental launch participants would not be ''third parties'' whose claims are compensated under the liability insurance required under the proposed regulations, launch participants could protect themselves by ensuring that their general liability policies would respond to compensate such claims. The Office believes that a variety of measures may be utilized by launch participants to manage the mandatory assumption of responsibility. At the same time, the objective of the risk allocation scheme—to limit the need for each launch participant to obtain broad liability coverage to protect itself from the universe of potential third-party claims—would be realized. The Office requests comments on its approach to implementing the waiver of claims and assumption of responsibility requirements of the Act. In doing so, commenters should bear in mind that there is no indication in the Act or its legislative history that employees of nongovernmental launch participant, unlike employees of Government launch participants, are intended to be included in the definition of ''third parties'' for purposes of these regulations. Nor is there any indication that the Government would agree to pay their claims as excess third-party claims (so-called ''indemnification'') to the extent employees' claims exceed required insurance. Moreover, considering employees of launch participants as third parties under the statutory definition would run counter to the assumption of responsibility for their loses mandated by the statute. Also, if such employees were included as ''third parties,'' the amount of third-party liability coverage the licensee would be required to obtain would likely increase significantly.

It is important to note that not all private participants in licensed launch activities are necessarily expected to accede to the reciprocal waiver of claims scheme in order to effect its purpose. Only those participants who have their personnel or property involved in licensed launch activities, and who may make claims against other participants as a result of loss or damage sustained by their personnel or property in the event of an accident, should be expected to enter into reciprocal waivers of claims. If all participants having personnel or property involved in licensed launch activities have acceded to the reciprocal waiver scheme, they would be foreclosed from making any claims against each other.

A question has been raised by a payload company as to the Office's requirements when multiple customers contract with a launch operator for launch services or there is more than one customer's payload on the launch manifest for a single launch. In those cases, executing a single waiver of claims agreement that includes each customer as a party to the agreement, or executing separate but appropriately modified agreements, would serve to ensure all parties have been included and protected as intended.

There has been some question as to the meaning and appropriate implementation of the provision in 49 U.S.C. 70112(b)(2), which requires the Secretary to enter into reciprocal waivers of claims ''for'' the Government's contractors and subcontractors involved in launch services. The Office has interpreted this provision to mean that contractors and

subcontractors of the United States are intended to be included as beneficiaries of the waiver of claims by the licensee, the customer and their respective contractors and subcontractors; and that the United States, through its appropriate agencies involved in licensed activities, is responsible for protecting their interests.

The proposed form of Agreement set forth in Appendix II to the proposed regulation continues the current practice of excluding from the waiver and assumption of responsibility claims for bodily injury or property damage resulting from willful misconduct of the parties. It also continues the current practice of requiring that parties waive claims, regardless of fault. Questions have been raised as to whether claims resulting from gross negligence are also excluded from the intended scope of the waiver. The Office believes that carving out an exception for gross negligence from the reciprocal waiver of claims could result in parties attempting, in effect, to nullify or avoid required waivers of claims by alleging sufficient evidence of gross negligence to withstand legal challenge, thereby defeating one of the purposes of the Agreement. The Office has not elected to do so in the proposed form of Agreement.

The Office believes its approach is consistent with the statutory intent of requiring launch participants to enter into a no-fault waiver of claims agreement in order to eliminate the need for additional insurance to protect against claims for damage caused by a party to the launch to any other party to the launch and to limit the total universe of claims resulting from a launch. Comments are solicited from the public on the proposed Agreement implementing 440.11(b), which is set out in Appendix II to the proposed regulation. If differs from the form that currently accompanies financial responsibility license orders but more closely conforms to the Office's view of the objectives of the statutory waiver requirements. A part to the Agreement wishing to modify its form may petition the Associate Administrator under the procedures set forth in 404.3 of the Regulations.

Section 440.19—United States Payment of Excess Third-Party Liability Claims

Payment by the United States of successful claims of third parties resulting from licensed launch activities, as provided in 49 U.S.C. 70113, is subject to appropriations laws or enactment of other legislative authority providing for the payment of claims submitted as part of a compensation plan prepared by the Office. The total amount of excess third-party claims that may be paid by the United States will not be greater than $1,500,000,000 (as adjusted for inflation occurring after January 1, 1989) above the amount of insurance required under § 440.9(c). However, to the extent a third-party claim results from the willful misconduct of a launch participant, the Government is not required to provide for payment of the claim. The statute limits this exception to willful misconduct by a licensee or transferee; however, the Office believes that any launch participant's willful misconduct relieves the Government from providing for payment of third-party claims against that launch participant under 49 U.S.C. 70113(a)(2).

In the event a successful claim is not covered by required insurance due to a policy exclusion that is found to be usual because insurance is not commercially available at reasonable cost, the Government would pay such claims from the first dollar of loss up to $1,500,000,000 (as adjusted for inflation occurring after January 1, 1989), again, subject to appropriate legislative action.

Excluded from the statutory obligation of the Secretary of Transportation to provide for payment of successful third-party claims are claims against contractors and subcontractors of the United States and its agencies involved in licensed activities. It has been suggested that this exclusion was inadvertent, and the Office believes that this is the better view. On the other hand, the Office is mindful of the availability of Government indemnification that may benefit such contractors and subcontractors pursuant to statutes other than 49 U.S.C. Subtitle IX. However, provision of this protection by the Government to its contractors and subcontractors may be made only under certain narrow circumstances, and is not routinely done. Where it is not done, a Government contractor or subcontractor would be required to purchase liability insurance to protect itself from third-party claims in excess of the liability policy obtained by the licensee, and would pass the cost through to the Government as an allowable cost under the contract. Therefore, absent legislative clarification, the Office is of the view that the United States would afford its contractors and subcontractors the protections offered to other launch participants under the payment of excess claims provisions of the statute, after the limits of the liability policy obtained by the licensee have been reached. However, this approach is not intended to interfere with or encumber the Government's enforcement of contractual rights and remedies with respect to its contractors. Public comment is sought as to whether this interpretation of 49 U.S.C. 70113 is in keeping with the overall risk allocation scheme of the Act.

Under proposed § 440.19(d), the Government would pay claims from the first dollar of loss upon expiration of the prescribed period of time for which the licensee is responsible for maintaining financial responsibility. Industry representatives have suggested that the Government's obligation to pay claims remains for three years following the launch event. However, the statutory payment of excess claims provision is limited to a successful claim of a third party against a launch participant ''resulting from an activity carried out under the license * * * for death, bodily injury or property damage or loss resulting from an activity carried out under the license.'' The statute further limits payment of excess claims ''to the extent the total amount of successful claims related to one launch'' exceeds the required amount of third-party liability insurance and is not more than $1,500,000,000 above that amount. 49 U.S.C. 70113(a). The Office believes that these provisions may be intended as a limitation on the claims that would be eligible for so-called indemnification by the Government. The Office requests comments on the nexus that must exist between a third-party claim and the licensed launch activity in order for the claim to be eligible for payment by the Government.

Proposed § 440.19(e) would establish procedural conditions for invoking the Government's payment of excess third-party claims provisions of the Act, including notice and participation or assistance in the defense by the United States of any claim or lawsuit by a third party arising out of licensed launch activities. This is consistent generally with the Government's usual practice for responding to similar claims.

Some industry representatives, as well as the COMSTAC, have recommended that the statutory provisions for Government payment of excess third-party claims should be memorialized in a contract between the United States Government and the intended beneficiaries of these provisions, similar to the indemnification agreements the Nuclear Regulatory Commission is required to enter into on behalf of the United States under the 1988 Price-Anderson Amendments, Pub. L. 100–408, to protect licensed operators of nuclear reactors from catastrophic losses. The Office believes that 49 U.S.C. 70113

does not constitute or establish an indemnification *obligation* on the part of the United States like that set forth in the Price-Anderson regime which, among other things, expressly requires a contractual undertaking and specifies necessary contractual provisions. 42 U.S.C. 2210. In contrast, 49 U.S.C. 70113 is largely procedural in nature. Any payment that the Secretary proposes be made under the statute is contingent on Congressional approval of a compensation plan and appropriation of funds or other legislative authority. Accordingly, the recommendation to reflect the Government's agreement for payment of excess claims in a contract is not included in this proposal.

As provided the statute and proposed section 440.19(f), in the event of catastrophic losses, the Office would prepare a compensation plan specifying the total amount of claims, suggesting sources of funding that may be available to pay the claims, and proposing any legislation necessary to authorize appropriation of funds and otherwise implement the plan. In addition, as provided by the Act, the Office is authorized to withhold payment of a claim that has not been decided by a Federal court if the Office finds the amount is unreasonable.

The Office welcomes comments from the public on appropriate implementation of 49 U.S.C. 70113 payment provisions. Comments would assist the Office in developing a future rulemaking that would address, more specifically, the mechanism for seeking payment by the Government of excess third-party claims.

Statutory Authority for This Proposed Rule

This proposal is issued pursuant to 49 U.S.C. Subtitle IX, ch. 701—Commerical Space Launch Activities, sections 70101–70119, formerly the Commercial Space Launch Act of 1984 (CSLA), as amended (49 U.S.C. App. 2601–2623). In 1988, Congress amended the CSLA by replacing general insurance requirements with a detailed financial responsibility and allocation of risk regime for licensed operations. The provisions, referred to as the 1988 Amendments, include procedures whereby the United States Government requires risk-based insurance to compensate for third-party liability and Government property damage claims, waives certain claims for its property damage and, subject to an appropriation law or other legislative authority, agrees to provide for payment of third-party claims in excess of required liability insurance. In addition, the 1988 Amendments require launch participants to enter into reciprocal waivers of claims in which the parties agree to absorb certain losses and the nongovernmental launch participants agree to be responsible for claims of their employees for damage or loss.

The Office has been implementing the 1988 Amendments on a case-by-case basis, through license orders issued with each license authorizing commercial space launch activities. Based upon its experience, the Office proposes to standardize requirements into rules of general applicability, wherever practicable.

Under 49 U.S.C. Subtitle IX, ch. 701, the Secretary is responsible for licensing and otherwise regulating commercial space launches and the commercial operation of launch sites carried out within the United States or by its citizens. In doing so, the Secretary is charged with protecting public health and safety, safety of property, and United States national security and foreign policy interests, and must ensure compliance with international treaty obligations of the United States, including the United Nations Treaties on Outer Space. The Secretary is also responsible for establishing requirements for proof of financial responsibility and other assurances necessary to protect the Government and its agencies and personnel from certain losses as a result of licensed activities involving Government facilities or personnel. 49 U.S.C. 70112(e).

The Associate Administrator for Commercial Space Transportation of the Federal Aviation Administration was delegated the Secretary's authority for carrying out the Secretary's responsibilities under the statute, effective November 15, 1995. The Commercial Space Transportation Licensing Regulations set forth in 14 CFR Ch. III apply to regulatory activities administered by the Office.

Paper Work Reduction Act

14 CFR part 440, as proposed, contains information collection requirements. In accordance with the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.*, the information collection requirements associated with this rule are being submitted to the Office of Management and Budget for review. The required information will be used to determine appropriate levels of financial responsibility and to determine whether licensees have complied with financial responsibility requirements as set forth in regulations and in a license order issued by the Office. The information to be collected includes data required for determining maximum probable loss, the three-party cross-waiver of claims agreement and evidence of insurance or other form of financial responsibility. Launch licensees must demonstrate financial responsibility at least 30 days before commencing licensed launch activities. The frequency of required submissions may depend upon the frequency of licensed launch activities; however, a license may authorize more than one launch. Respondents are all licensees authorized to conduct licensed launch activities. In addition to the licensee, its customers and the contractors and subcontractors of each are required to enter into reciprocal waiver of claims agreements. Estimated Average Burden Hours Per Respondent: 261 hours.

The Office considers comments by the public on the proposed collection of information in order to evaluate the accuracy of the Office's estimate of the burden of the proposed collection of information, the quality, utility and clarity of the information to be collected, and possible ways to minimize the burden of the collection.

In submitting comments to OMB, commenters should keep in mind that OMB is required to make a decision concerning the collection of information contained in the proposed regulations between 30 and 60 days after publication of this document in the Federal Register.

Comments on the proposed information collection requirements should be submitted to: Office of Management and Budget, Washington, DC 20503, Attention: Desk Officer for the Federal Aviation Administration, U.S. Department of Transportation. It is requested that comments sent to OMB also be sent to the rulemaking docket for this proposed action, Room 612, Federal Aviation Administration, U.S. Department of Transportation, 800 Independence Avenue, SW., Washington, DC 20591.

Impact Analyses

Proposed changes to Federal regulations must undergo several economic analyses. First, Executive Order 12866 directs that agencies shall propose or adopt a regulation only upon a determination that the benefits of the intended regulation justify its costs. Second, the Regulatory Flexibility Act of 1980 requires agencies to analyze the economic effect of regulatory changes on small entities. Third, the Office of Management and Budget (OMB) directs agencies to assess the effect of regulatory changes on international trade. In addition, under regulatory policies and procedures of the Department of Transportation (44 FR

11034; February 26, 1979), this proposed rule is considered significant because there is substantial public interest in the rulemaking. This rule has been reviewed by OMB under Executive Order 12866.

Economic Impacts

Executive Order 12866 directs that each Federal agency proposing to adopt a regulation may do so only upon a reasoned determination that the benefits of the intended regulation justify its costs. The Office has prepared a detailed analysis of the economic effects that would be associated with the proposed rule. Its findings are set forth in an economic impact assessment, copies of which are available from the FAA Rules Docket. As part of its analysis, the Office considered alternatives, taking into account that the principal requirements of the proposed rule are mandated by statute.

Under the 1988 Amendments, as implemented by the Office in regulations, required insurance would be available to compensate third parties, including certain Government personnel, who may suffer bodily injury or property damage as a result of licensed launch activities. Additionally, required insurance protects all launch participants from third party claims and provides cost savings to each participant by relieving them of the need to obtain separate liability insurance covering those risks. Potential costs of litigation should be eliminated as a result of required cross-waivers of claims among launch participants. There is a reallocation of expected costs of claims of $20,000 over a four-year period from the U.S. commercial space launch industry to the United States, as a consequence of the Government's payment of excess third-party claims under the Act, up to a $1.5 billion exposure for liability. Additional costs to the Government to administer requirements imposed under the 1988 Amendments and the proposed regulations are expected to have an upper limit of $673,000 over four years.

Impacts on Small Entities

The Regulatory Flexibility Act of 1980 (RFA) was enacted by Congress to ensure that small entities are not unnecessarily or disproportionately burdened by Federal regulations. The Office analyzed the economic impact of the proposed regulations on small commercial entities, as part of its economic impact assessment. For purposes of the analysis, the Office utilized the Standard Industrial Classification codes and size standards for business entities relating to space vehicles, which define small entities as those comprised of fewer than 1000 employees. 13 CFR 121.601. Because the commercial launch industry is evolving new ways of doing business, the Office also considered as small commercial entities those firms offering or planning to offer commercial space transportation services that have not had long-term relationships with the U.S. Government as a contractor-manufacturer of expendable launch vehicles or components, or have not received rights to use government-developed launch vehicles. These are few in number.

The economic impacts on small commercial entities resulting from the 1988 Amendments to the Act are largely benefits. The Office's analysis reveals only non-quantifiable costs to commercial entities as a result of the proposed regulations. They include minimal paperwork costs and costs that may result from having to obtain insurance in advance of licensed launch activities to demonstrate compliance with financial responsibility requirements. Neither of these costs would have a disproportionate impact on small commercial entities. Based upon the Office's economic impact assessment, the Office has determined that the proposed rule would not have a significant economic impact on a substantial number of small entities.

International Trade Impact Assessment

The impact of the proposed rule on international trade is expected to be beneficial. The proposal rule would codify in regulations the financial responsibility and allocation of risk requirements imposed under the 1988 Amendments to the Commercial Space Launch Act of 1984, codified at 49 U.S.C. Subtitle IX, ch. 701. One of the primary objectives of the 1988 Amendments was to enable U.S. launch services providers to compete more effectively with foreign competitors.

Customers may enjoy enhanced understanding of the benefits and responsibilities that attend licensed launch activities carried out within the United States or by its citizens. By clarifying the U.S. Government's agreement, subject to appropriations laws or other additional legislative authority, to provide for the payment of excess third-party claims above required insurance, the proposed regulations may enable U.S. companies to negotiate more effectively with foreign customers who must choose between U.S. and other competing launch services providers.

Federalism Implications

The proposed regulations would not have substantial direct effects on the states, on the relationship between the Federal government and the states, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that the proposed regulation does not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

List of Subjects in 49 CFR Part 440

Armed forces; Claims; Federal building and facilities; Government property; Indemnity payments; Insurance; Reporting and recordkeeping requirements; Rockets; Space transportation and exploration.

Proposed Regulation

In consideration of the foregoing, the Office of the Associate Administrator for Commercial Space Transportation proposes to amend the Commercial Space Transportation Licensing Regulations, 14 CFR Ch. III, as follows:

1. Subchapter C of Chapter III, Title 14, Code of Federal Regulations, would be amended by adding a new part 440 to read as follows:

PART 440—FINANCIAL RESPONSIBILITY

Subpart A—Financial Responsibility for Licensed Launch Activities

Sec.
440. 1 Scope; Basis.
440. 3 Definitions.
440. 5 General.
440. 7 Determination of maximum probable loss.
440. 9 Insurance requirements for licensed launch activities.
440. 11 Duration of coverage; modifications.
440. 13 Standard conditions of insurance coverage.
440. 15 Demonstration of compliance.
440. 17 Reciprocal waiver of claims requirement.
440. 19 United States payment of excess third-party liability claims.

Authority: 49 U.S.C. 70101–70119; 49 CFR 1.47.

§ 440.1 Scope; Basis.

This part sets forth financial responsibility and allocation of risk requirements applicable to commercial space launch activities that are authorized to be conducted under a launch license issued pursuant to this subchapter.

§ 440.3 Definitions.

(a) For purposes of this part—

(1) *Bodily injury* means physical injury, sickness, disease, disability, shock, mental anguish, or mental injury sustained by any person, including death.

(2) *Contractors and subcontractors* means those entities that are involved at any tier, directly or indirectly, in licensed launch activities, and includes suppliers of property and services, and the component manufacturers of a launch vehicle or payload.

(3) *Customer* means the person who procures launch services from the licensee, and any person to whom the customer has sold, leased, assigned, or otherwise transferred its rights in the payload (or any part thereof) to be launched by the licensee, including a conditional sale, lease, assignment, or transfer of rights.

(4) *Federal range facility* means a Government-owned installation at which launches take place.

(5) *Financial responsibility* means statutorily required financial ability to meet liability as required under 49 U.S.C 70101–70119.

(6) *Government personnel* means employees of the United States, its agencies, and its contractors and subcontractors, involved in launch services for licensed launch activities. Employees of the United States include members of the Armed Forces of the United States.

(7) *Hazardous operations* means activities, processes, and procedures that, because of the nature of the equipment, facilities, personnel, or environment involved or function being performed, may result in bodily injury or property damage.

(8) *Liability* means a legal obligation to pay claims for bodily injury or property damage resulting from licensed launch activities.

(9) *License* means an authorization to conduct licensed launch activities, issued by the Office under this subchapter.

(10) *Licensed launch activities* means the launch of a launch vehicle as defined in a regulation or license issued by the Office and carried out pursuant to a license.

(11) *Maximum probable loss* (MPL) means the greatest dollar amount of loss for bodily injury or property damage that is reasonably expected to result from licensed launch activities;

(i) Losses to third parties, excluding Government personnel, that are reasonably expected to result from licensed launch activities are those having a probability of occurrence on the order of no less than one in ten million.

(ii) Losses to Government property and Government personnel that are reasonably expected to result from licensed launch activities are those having a probability of occurrence on the order of no less than one in one hundred thousand.

(12) *Office* means the Associate Administrator for Commercial Space Transportation of the Federal Aviation Administration, U.S. Department of Transportation.

(13) *Property damage* means partial or total destruction, impairment, or loss of tangible property, real or personal.

(14) *Regulations* means the Commercial Space Transportation Licensing Regulations, codified at 14 CFR Ch. III.

(15) *Third party* means.

(i) Any person other than:

(A) The United States, its agencies, and its contractors and subcontractors involved in launch services for licensed launch activities;

(B) The licensee and its contractors and subcontractors involved in launch services for licensed launch activities; and

(C) The customer and its contractors and subcontractors involved in launch services for licensed launch activities.

(ii) Government personnel, as defined in this section, are third parties. For purposes of these regulations, employees of other launch participants identified in paragraphs (a)(15)(i)(B) and (C) of this section are not third parties.

(16) *United States* means the United States Government, including its agencies.

(b) Except as otherwise provided in this section, any term used in this part and defined in 49 U.S.C. 70101–70119, or in § 401.5 of this chapter shall have the meaning contained therein.

§ 440.5 General.

(a) No person shall commence or conduct launch activities that require a license unless that person has obtained a license and fully demonstrated compliance with the financial responsibility and allocation of risk requirements set forth in this part.

(b) The Office shall prescribe the amount of financial responsibility a licensee is required to obtain, and any additions to or modifications of the amount, in a license order issued concurrently with or subsequent to the issuance of a license.

(c) Demonstration of financial responsibility under this part shall not relieve the licensee of ultimate responsibility for liability, loss, or damage sustained by the United States resulting from licensed launch activities, except to the extent that:

(1) Liability, loss, or damage sustained by the United States results from willful misconduct of the United States or its agents, including Government personnel;

(2) Covered claims by third parties for bodily injury or property damage arising out of any particular launch exceed the amount of financial responsibility required under § 440.9(c) of this part and do not exceed $1,500,000,000 (as adjusted for inflation occurring after January 1, 1989) above such amount, and are payable pursuant to 49 U.S.C. 70113 and § 440.19 of this part;

(3) Covered claims for property loss or damage exceed the amount of financial responsibility required under § 440.9(e) of this part; or

(4) The licensee has no liability for claims by third parties for bodily injury or property damage arising out of any particular launch that exceed $1,500,000,000 (as adjusted for inflation occurring after January 1, 1989).

(d) A licensee's failure to comply with the requirements in this part may result in suspension or revocation of a license, and subjects the licensee to civil penalties as provided in part 405 of this chapter.

§ 440.7 Determination of maximum probable loss.

(a) The Office shall determine the maximum probable loss (MPL) from claims by a third party for bodily injury or property damage, and the United States, its agencies, and its contractors and subcontractors for covered property damage or loss, resulting from licensed launch activities. The maximum probable loss determination forms the basis for financial responsibility requirements issued in a license order.

(b) The Office issues its determination of maximum probable loss no later than ninety days after a licensee or transferee has requested a determination and submitted all information required by the Office to make the determination. The Office shall consult with Federal agencies that are involved in, or whose personnel or property are exposed to risk of damage or loss as a result of, licensed launch activities before issuing a license order prescribing financial responsibility requirements and shall notify the licensee or transferee if timely issuance of the MPL determination is not possible due to interagency consultation.

(c) Information requirements for obtaining a maximum probable loss determination are set forth in Appendix I to this part. Any person requesting a determination of maximum probable loss shall submit information in accordance with Appendix I requirements, unless the Office has waived requirements. In lieu of submitting required information, a person requesting a maximum probable loss determination may designate and

certify certain information previously submitted for a prior determination as complete, valid, and equally applicable to its current request. The requester is responsible for the continuing accuracy and completeness of information submitted under this part and shall promptly report any changes in writing.

(d) The Office shall amend a determination of maximum probable loss required under this section at any time prior to completion of licensed launch activities as warranted by supplementary information provided to or obtained by the Office after the MPL determination is issued. Any change in financial responsibility requirements as a result of an amended MPL determination shall be set forth in a license order.

(e) The Office may make a determination of maximum probable loss at any time other than as set forth in paragraph (b) of this section upon request by any person.

§ 440.9 Insurance requirements for licensed launch activities.

(a) As a condition of each launch license, the licensee shall comply with insurance requirements set forth in this section and in a license order issued by the Office, or may otherwise demonstrate the required amount of financial responsibility.

(b) The licensee shall obtain and maintain in effect a policy or policies of liability insurance, in an amount determined by the Office under paragraph (c) of this section, that protects the following persons as additional insureds to the extent of their respective potential liabilities against claims by a third party for bodily injury or property damage resulting from licensed launch activities:

(1) The licensee, its customer, and their respective contractors and subcontractors;

(2) The United States, its agencies, and its contractors and subcontractors; and

(3) Government personnel.

(c) The Office shall prescribe for each licensee the amount of insurance required to compensate the total of third-party claims for bodily injury or property damage resulting from licensed launch activities in connection with any particular launch. The amount of insurance required is based upon the Office's determination of maximum probable loss; however, it will not exceed the lesser of:

(1) $500 million; or

(2) The maximum liability insurance available on the world market at a reasonable cost, as determined by the Office.

(d) The licensee shall obtain and maintain in effect a policy or policies of insurance, in an amount determined by the Office under paragraph (e) of this section, that covers claims by the United States, it agencies, and its contractors and subcontractors for property damage or loss resulting from licensed launch activities. Property covered by this insurance shall include all property owned, leased, or occupied by, or within the care, custody, or control of, the United States, its agencies, and its contractors and subcontractors, at a Federal range facility. Insurance shall protect the United States, its agencies, and it contractors and subcontractors.

(e) The Office shall prescribe for each licensee the amount of insurance required to compensate claims for property damage under paragraph (d) of this section resulting from licensed launch activities in connection with any particular launch. The amount of insurance is based upon a determination of maximum probable loss; however, it will not exceed $100 million.

(f) In lieu of a policy of insurance, a licensee may demonstrate financial responsibility in another manner meeting the terms and conditions applicable to insurance as set forth in this part. The licensee shall describe in detail the method proposed for demonstrating financial responsibility and how it assures that the licensee is able to cover claims as required under this part.

§ 440.11 Duration of coverage; modifications.

(a) Insurance coverage required under § 440.9, or other form of financial responsibility, shall attach upon commencement of licensed launch activities, and remain in full force and effect until the later of completion of licensed launch activities as defined by the Office in regulations, or until risk to third parties and Government property as a result of licensed launch activities is sufficiently small, as determined by the Office through the risk analysis conducted to determine MPL, that financial responsibility is no longer necessary. The required duration of financial responsibility shall be specified in a license order, and may be amended in the event a launch anomaly results in additional risks to third parties or Government property.

(b) Financial responsibility required under this part may not be replaced, canceled, changed, withdrawn, or in any way modified to reduce the limits of liability or the extent of coverage, nor expire by its own terms, prior to the time specified in a license order, unless the Office is notified in advance and expressly approves the modification.

§ 440.13 Standard conditions of insurance coverage.

(a) Insurance obtained under § 440.9 shall comply with the following terms and conditions of coverage:

(1) Bankruptcy or insolvency of an insured, including any additional insured, shall not relieve the insurer or any or its obligations under any policy.

(2) Policy limits shall apply separately to each occurrence and to the total claims arising out of licensed launch activities in connection with any particular launch.

(3) Except as provided herein, each policy shall pay claims from the first dollar of loss, without regard to any deductible, to the limits of the policy. A licensee may obtain a policy containing a deductible amount if the amount of the deductible is placed in an escrow account or otherwise demonstrated to the unobligated, unencumbered funds of the licensee, available to compensate claims at any time claims may arise.

(4) Policies shall not be invalidated by any action or inaction of the licensee or any additional insured, including nonpayment by the licensee of the policy premium, and shall insure the licensee and each additional insured regardless of any breach or violation of any warranties, declarations, or conditions contained in the policies by the licensee or any additional insured (other than a breach of violation by the licensee or an additional insured, and then only as against that licensee or additional insured).

(5) Exclusions from coverage shall be specified.

(6) Insurance shall be primary without right of contribution from any other insurance that is carried by the licensee or any additional insured. Each policy shall expressly provide that all of its provisions, except the policy limits, operate in the same manner as if there were a separate policy with and covering the licensee and each additional insured.

(7) Each policy shall be placed with an insurer of recognized reputation and responsibility that is licensed to do business in any State, territory, possession of the United States, or the District of Columbia.

(8) Except as to claims resulting from the willful misconduct of the United States or its agents, the insurer shall waive any and all rights of subrogation against each of the parties protected by required insurance.

(b) [Reserved]

§ 440.15 Demonstration of compliance.

(a) A licensee must submit evidence of financial responsibility and compliance with allocation of risk requirements under this part, as follows, unless a licensee order specifies fewer days due to the proximity of the licensee's intended date for commencement of licensed launch activities:

(1) The three-party cross-waiver of claims agreement required under § 440.17(c) of this part shall be submitted at least 30 days before commencement of licensed launch activities;

(2) Evidence of insurance shall be submitted at least 30 days before commencement of licensed launch activities; and

(3) Evidence of financial responsibility in a form other than insurance, ad provided under § 440.9(f) of this part, shall be submitted at least 60 days before commencement of licensed launch activities.

(b) Upon a complete demonstration of compliance with financial responsibility and allocation of risk requirements under this part, the requirements shall preempt any provisions in agreements between the licensee and an agency of the United States governing access to or use of United States launch property or launch services for licensed launch activities which address financial responsibility, allocation of risk and related matters covered by 49 U.S.C. 70112, 70113.

(c) A licensee must demonstrate compliance as follows:

(1) The licensee shall provide proof of insurance required under § 440.9 by:

(i) Certifying to the Office that it has obtained insurance in compliance with the requirements of this part and any applicable license order;

(ii) Filing with the Office one or more certificates of insurance evidencing insurance coverage by one or more insurers under a currently effective and properly endorsed policy or policies of insurance, applicable to licensed launch activities, on terms and conditions and in amounts prescribed under this part, and specifying policy exclusions;

(iii) In the event of any policy exclusions or limitations of coverage that may be considered usual under § 440.19(c) of this part, or for purposes of implementing the Government's waiver of claims for property damage under the Act, certifying that insurance covering the excluded risks is not commercially available at reasonable cost; and

(iv) Submitting to the Office, for signature by the Department on behalf of the United States Government, the duly executed waiver of claims and assumption of responsibility agreement required by § 440.17(c) of this part.

(2) Certifications required under this section shall be signed by a duly authorized officer of the licensee.

(d) Certificate(s) of insurance required under paragraph (c)(1)(ii) of this section shall be signed by the insurer issuing the policy and accompanied by an opinion of the insurer that the insurance obtained by the licensee complies with the specific requirements for insurance set forth in this part and any applicable license order.

(e) The licensee shall maintain, and make available for inspection by the Office upon request, all required policies of insurance and other documents necessary to demonstrate compliance with this part.

(f) In the event the licensee demonstrates financial responsibility using means other than insurance, as provided under § 440.9(f) of this part, the licensee shall provide proof that it has met the requirements set forth in this part and in a license order issued by the Office.

§ 440.17 Reciprocal waiver of claims requirements.

(a) As a condition of each launch license, the licensee shall comply with reciprocal waiver of claims requirements as set forth in this section.

(b) The licensee shall implement reciprocal waivers of claims with its contractors and subcontractors, its customer(s) and the customer's contractors and subcontractors, under which each party waives and releases claims against the other parties to the waivers and agrees to assume responsibility for property damage it sustains and for bodily injury or property damage sustained by its own employees resulting from licensed launch activities, regardless of fault.

(c) For each licensed launch in which the U.S. Government, its agencies, or its contractors and subcontractors is involved in licensed launch activities or where property insurance is required under § 440.9(d) of this part, the Department of Transportation, the licensee, and its customer shall enter into a three-party reciprocal waiver of claims agreement in the form set forth in Appendix II to this part. If the licensee's customer is an agency of the U.S. Government, the Agreement shall be modified to reflect that, for purposes of the Agreement, the customer is a Government agency involved in licensed launch activities except that the government customer waives claims and accepts responsibility for damage or loss to its property.

(d) The licensee, its customer, and the United States but only to the extent provided in legislation, shall agree in any waiver of claims agreements required under this part to indemnify another party to the agreement from claims by the indemnifying party's contractors and subcontractors arising out of the indemnifying party's failure to implement properly the waiver requirement.

§ 440.19 United States payment of excess third-party liability claims.

(a) The United States shall pay successful claims (including reasonable expenses of litigation or settlement) of a third party against the licensee, the customer, and the contractors and subcontractors of the licensee and the customer, and the contractors and subcontractors of the United States and its agencies involved in licensed launch activities to the extent provided in an appropriation law or other legislative authority providing for payment of claims in accordance with 49 U.S.C. 70113, and to the extent the total amount of such claims arising out of any particular launch:

(1) Exceeds the amount of insurance required under § 440.9(b); and

(2) Is not more than $1,500,000,000 (as adjusted for inflation occurring after January 1, 1989) above that amount.

(b) Payment by the United States under paragraph (a) of this section shall not be made for any part of such claims for which the bodily injury or property damage results from willful misconduct by the party seeking payment.

(c) The United States shall provide for payment of claims by third parties for bodily injury of property damage that are payable under 49 U.S.C. 70113 and not covered by required insurance under § 440.9(b), without regard to the limitation under paragraph (a)(1) of this section, because of an insurance policy exclusion that is usual. A policy exclusion is considered usual only if insurance covering the excluded risk is not commercially available at reasonable rates. The licensee must submit a certification in accordance with § 440.15(c)(1)(iii) of this part for the United States to cover such claims.

(d) Upon the expiration of the policy period prescribed in accordance with § 440.11(a), the United States shall provide for payment of claims that are payable under 49 U.S.C. 70113 from the first dollar of loss up to $1,500,000,000 (as adjusted for inflation occurring after January 1, 1989).

(e) Payment by the United States of excess third-party claims under 49 U.S.C. 70113 shall be subject to:

(1) Prompt notice by the licensee to the Office that the total amount of claims arising out of licensed launch activities exceeds, or is likely to exceed, the required amount of financial responsibility. For each claim, the notice must specify the nature, cause, and amount of the claim or lawsuit associated with the claim, and the party or parties who may otherwise be liable for payment of the claim;

(2) Participation or assistance in the defense of the claim or lawsuit by the United States, at its election;

(3) Approval by the Office of any settlement, or part of a settlement, to be paid by the United States; and

(4) Approval by Congress of a compensation plan prepared by the Office and submitted by the President.

(f) The Office will:

(1) Prepare a compensation plan outlining the total amount of claims and meeting the requirements set forth in 49 U.S.C. 70113;

(2) Recommend sources of funds to pay the claims; and

(3) Propose legislation as required to implement the plan.

(g) The Office may withhold payment of a claim if the Office finds that the amount is unreasonable, unless it is the final order of a United States Court.

Appendix I—Information Requirements for Obtaining a Maximum Probable Loss Determination for Licensed Launch Activities

Any person requesting a maximum probable loss determination shall submit the following information to the Office, unless the Office has waived a particular information requirement under 14 CFR 440.7(c):

I. General Information

A. Mission description.

1. A description of mission parameters, including:

a. Launch trajectory;

b. Orbital inclination; and

c. Orbit altitudes (apogee and perigee).

2. Flight sequence.

3. Staging events and the time for each event.

4. Impact locations.

5. Identification of the launch range facility, including the launch complex on the range, planned date of launch, and launch windows.

6. If the applicant has previously been issued a license to conduct launch activities using the same launch vehicle from the same launch range facility, a description of any differences planned in the conduct of proposed activities.

B. Launch Vehicle Description.

1. General description of launch vehicle and its stages, including dimensions.

2. Description of major systems, including safety systems.

3. Description of rocket motors and type of fuel used.

4. Identification of all propellants to be used and their hazard classification under the Hazardous Materials Table, 49 CFR 172.101.

5. Description of hazardous components.

C. Payload.

1. General description of the payload, including type (e.g., telecommunications, remote sensing), propellants, and hazardous components or materials, such as toxic or radioactive substances.

D. Flight Termination System.

1. Identification of any flight termination system (FTS) on the launch vehicle, including a description of operations and component location on the vehicle.

II. Pre-flight Processing Operations

A. General description of pre-flight operations including vehicle processing consisting of an operational flow diagram showing the overall sequence and location of operations, commencing with arrival of vehicle components at the launch range facility through final safety checks and countdown sequence, and designation of hazardous operations, as defined in 14 CFR 440.3. For purposes of these information requirements, payload processing, as opposed to integration, is not a hazardous operation.

B. For each hazardous operation, including but not limited to fueling, solid rocket motor build-up, ordnance installation, ordnance checkout, movement of hazardous materials, and payload integration:

1. Identification of location where each operation will performed, including each building or facility identified by name or number.

2. Identification of facilities adjacent to the location where each operation will be performed and therefore exposed to risk, identified by name or number.

3. Maximum number of third-party personnel, including but not limited to Government personnel, who may be exposed to risk during each operation. For Government personnel, identification of his or her employer.

4. Identification of launch range facility policies or requirements applicable to the conduct of operations.

III. Flight Operations

A. Identification of launch range facilities exposed to risk during launch vehicle lift-off and flight.

B. Identification of accident failure scenarios, probability assessments for each, and estimation of risks to third parties and Government property due to property damage or bodily injury. Scenarios shall cover the range of launch trajectories, inclinations and orbits for which authorization is sought in the license application. The estimation of risks for each scenario shall take into account the number of third parties at risk as a result of lift-off and flight of a launch vehicle (on-range, off-range, and down-range) and specific, unique facilities exposed to risk.

C. On-orbit risk analysis assessing risks posed by a launch vehicle to operational satellites.

D. Reentry risk analysis assessing risks to third parties as a result to reentering debris or reentry of the launch vehicle or its components.

E. Trajectory data as follows: Nominal and 3-sigma lateral trajectory data in x, y, z and X, Y, Z coordinates in one-second intervals, data to be pad-centered with x being along the initial launch azimuth and continuing through impact for suborbital flights, and continuing through orbital insertion or the end of powered flight for orbital flights.

F. Tumble-turn data for guided vehicles only, as follows: For vehicles with gimbaled nozzles, tumble turn data with zeta angles and velocity magnitudes stated. A separate table is required for each combination of fail times (every two to four seconds), and significant nozzle angles (two or more small angels, generally between one and five degrees).

G. Identification of debris lethal areas and the projected number and ballistic coefficient of fragments expected to result from flight termination, initiated either by command or self-destruct mechanism, for lift-off, land overflight, and reentry.

IV. Post-flight Processing Operations

A. General description of post-flight ground operations including overall sequence and location of operations for removal of vehicle components and processing equipment from the launch range facility and for handling of hazardous materials, and designation of hazardous operations.

B. Identification of all facilities used in conducting post-flight processing operations.

C. For each hazardous operation:

1. Identification of location where each operation is performed, including each building or facility identified by name or number.

2. Identification of facilities adjacent to location where each operation is performed and exposed to risk, identified by name or number.

3. Maximum number of third-party personnel, including but not limited to Government personnel, who may be exposed to risk during each operation. For Government personnel, identification of his or her employer.

4. Identification of launch range facility policies or requirements applicable to the conduct of operations.

Appendix II—Agreement for Waiver of Claims and Assumption of Responsibility

THIS AGREEMENT is entered into this ____ day of _____, by and among [Licensee] (the ''Licensee''), [Customer] (the ''Customer'') and the Department of Transportation, on behalf of the United States Government (collectively, the ''Parties''), to implement the provisions of section 440.7(c) of the Commercial Space Transportation Licensing Regulations, 14 CFR Ch. III (the ''Regulations'').

In consideration of the mutual releases and promises contained herein, the Parties hereby agree as follows:

1. Definitions

''Customer'' means the above-named Customer on behalf of the Customer and any

person to whom the Customer has sold, leased, assigned, or otherwise transferred its rights in the payload (or any part thereof) to be launched by the licensee, including a conditional sale, lease, assignment, or transfer of rights.

''License'' means License No. ____ issued on _____, by the Associate Administrator for Commercial Space Transportation, Federal Aviation Administration, Department of Transportation, to the Licensee, including all license orders issued in connection with the License.

''Licensee'' means the Licensee and any transferee of the Licensee under 49 U.S.C. Subtitle IX, ch. 701.

''United States Government'' means the United States, its agencies involved in Licensed Launch Activities, and its contractors and subcontractors involved in Licensed Launch Activities.

Except as otherwise defined herein, terms used in this Agreement and defined in 49 U.S.C. Subtitle IX, ch. 701—Commercial Space Launch Activities, or in the Regulations, shall have the same meaning as contained in 49 U.S.C. Subtitle IX, ch. 701, or the Regulations, respectively.

2. Waiver and Release of Claims

(a) Licensee hereby waives and releases claims it may have against Customer, Customer's Contractors and Subcontractors, and the United States Government, for Property Damage it sustains and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault.

(b) Customer hereby waives and releases claims it may have against Licensee, its Contractors and Subcontractors, and the United States Government, for Property Damage it sustains and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault.

(c) The United States Government hereby waives and releases claims it may have against Licensee and Customer, and against their respective Contractors and Subcontractors, for Property Damage it sustains, to the extent that claims it would otherwise have for such damage exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(e) of the Regulations, 14 CFR § 440.9(e), regardless of fault.

3. Assumption of Responsibility

(a) Licensee and Customer shall each be responsible for Property Damage it sustains and for Bodily Injury or Property Damage sustained by its own employees, resulting from Licensed Launch Activities, regardless of fault.

(b) The United States Government shall be responsible for Property Damage it sustains, to the extent that claims it would otherwise have for such damage exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(e) of the Regulations, 14 CFR § 449.9(e), regardless of fault.

4. Extension of Assumption and Waiver

(a) Licensee shall extend the waiver and release of claims and the requirement of the assumption of responsibility as set forth in paragraphs 2(a) and 3(a), respectively, to its Contractors and Subcontractors by requiring them to waive and release all claims they may have against Customer, Customer's Contractors and Subcontractors, and the United States Government, and to agree to be responsible, for Property Damage they sustain and for Bodily Injury or Property Damage sustained by their own employees, resulting from Licensed Launch Activities, regardless of fault.

(b) Customer shall extend the waiver and release of claims and the requirement of the assumption of responsibility as set forth in paragraphs 2(b) and 3(a), respectively, to its Contractors and Subcontractors by requiring them to waive and release all claims they may have against Licensee, the Licensee's Contractors and Subcontractors, and the United States Government, and to agree to be responsible, for Property Damage they sustain and for Bodily Injury or Property Damage sustained by their own employees, resulting from Licensed Launch Activities, regardless of fault.

5. Indemnification

(a) Licensee shall hold harmless and indemnify Customer and its directors, officers, servants, agents, subsidiaries, employee and assignees, or any of them, and the United States Government and its directors, officers, servants, agents, subsidiaries, employee and assignees, or any of them, from and against liability, loss or damage arising out of claims that Licensee's Contractors and Subcontractors may have for Property Damage sustained by them and for Bodily Injury or Property Damage sustained by their employees, resulting from Licensed Launch Activities.

(b) Customer shall hold harmless and indemnify Licensee and its directors, officers, servants, agents, subsidiaries, employees and assignees, or any of them, and the United States Government and its directors, officers, servants, agents, subsidiaries, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims that Customer's Contractors and Subcontractors, or any person on whose behalf Customer enters into this Agreement, may have for Property Damage sustained by them and for Bodily Injury or Property Damage sustained by their employees, resulting from Licensed Launch Activities.

(c) To the extent provided in advance in an appropriation law or to the extent there is enacted additional legislative authority providing for the payment of claims, the United States shall hold harmless and indemnify Licensee and Customer and their respective directors, officers, servants, agents, subsidiaries, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims that any person on whose behalf the Department enters into this Agreement may have for Property Damage sustained by them, resulting from Licensed Launch Activities.

6. Assurances under 49 U.S.C. 70112(e)

Notwithstanding any provision of this Agreement to the contrary, Licensee shall hold harmless and indemnify the United States Government and its agencies, servants, agents, employees and assignees, or any of them, from and against liability, loss or damage arising out of claims for Bodily Injury or Property Damage, resulting from Licensed Launch Activities, regardless of fault, except to the extent that: (i) As provided in section 7(b) of this Agreement, claims result from willful misconduct of the United States Government or its agents; (ii) claims for Property Damage sustained by the United States Government exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(e) of the Regulations (14 CFR § 440.9(e)); (iii) claims by a Third Party for Bodily Injury or Property Damage exceed the amount of insurance or demonstration of financial responsibility required under section 440.9(c) of the Regulations (14 CFR § 440.9(c)), and do not exceed $1,500,000,000 (as adjusted for inflation after January 1, 1989) above such amount, and are payable pursuant to the provisions of 49 U.S.C. 70113 and section 440.19 of the Regulations (14 CFR § 440.19); or (iv) Licensee has no liability for claims exceeding $1,500,000,000 (as adjusted for inflation after January 1, 1989).

7. Miscellaneous

(a) Nothing contained herein shall be construed as a waiver or release by Licensee, Customer or the United States Government of any claim by an employee of the Licensee, Customer or the United States Government, respectively, including a member of the Armed Forces of the United States, for Bodily Injury or Property Damage, resulting from Licensed Launch Activities.

(b) Notwithstanding any provision of this Agreement to the contrary, any waiver, release, assumption of responsibility or agreement to indemnify herein shall not apply to claims for Bodily Injury or Property Damage resulting from willful misconduct of any of the Parties, the Contractors and Subcontractors of any of the Parties, and the directors, officers, agents and employees of any of the foregoing.

(c) In the event that more than one customer is involved in Licensed Launch Activities, references herein to Customer shall apply to, and be deemed to include, each such customer severally and not jointly.

(d) The Agreement shall be governed by and construed in accordance with United States Federal law.

In Witness Whereof, the Parties to this Agreement have caused the Agreement to be duly executed by their respective duly authorized representatives as of the date written above.

Licensee

By:
Its:

Customer

By:
Its:

Department of Transportation

By:
Its: Associate Administrator for Commercial Space Transportation, Federal Aviation Administration

Issued in Washington, DC., this 17th day of July 1996.

Patti Grace Smith,

Acting Associate Administrator for Commercial Space Transportation, Federal Aviation Administration.

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