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October 28, 2002

DEPT. OF TRANSPORTATION
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Docket Management System
U.S. Department of Transportation
Room Plaza 401
400 Seventh Street, SW
Washington, DC 20590-0001

Re: Docket No. FAA-2000-7953 -29

To Whom It May Concern:

Enclosed are the Comments of Sea Launch Company, L.L.C., in response to the Federal Aviation Administration's *Licensing and Safety Requirements for Launch, Supplemental Notice of Proposed Rulemaking*, in the above-referenced docket. Also enclosed, at the FAA's request, is a Cost Estimate of complying with the FAA's proposed rule.

Sea Launch Company requests confidential treatment for the Cost Estimate as it includes proprietary, competition sensitive cost data. Accordingly, Sea Launch Company requests that the Cost Estimate not be placed in the docket or otherwise in the public record. The Freedom of Information Act, 5 U.S.C. § 552(b)(4), and Department of Transportation regulations, 49 C.F.R. § 7.13(c)(4), exempt from disclosure "trade secrets and commercial confidential or financial information obtained from a person and privileged or confidential." The Cost Estimate has been marked "SEA LAUNCH PROPRIETARY."

Sincerely,

[Handwritten signature]

Enclosure

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**BEFORE THE
FEDERAL AVIATION ADMINISTRATION
WASHINGTON, D.C.**

DEPT. OF TRANSPORTATION
ROCKETS

02 OCT 28 AM 11:42

Supplemental Notice of Proposed Rulemaking and Notice of Proposed Rulemaking)	
)	
)	Docket No. FAA-2000-7953
)	
Licensing and Safety Requirements for Launch, 14 CFR Parts 413,415, and 417)	
)	
)	

COMMENTS OF SEA LAUNCH COMPANY, L.L.C.

Sea Launch Company, L.L.C., on behalf of Sea Launch Limited Partnership (“Sea Launch”), submits these comments in response to the Federal Aviation Administration’s (“FAA”) *Licensing and Safety Requirements for Launch, Notice of Proposed Rulemaking*, October 25, 2000 (“NPFW”), and *Supplemental Notice of Proposed Rulemaking*, July 30, 2002 (“SNPRM”). Sea Launch Company previously submitted comments on the NPRM. This submission supplements those comments.

1. BACKGROUND AND SUMMARY OF ARGUMENT

Sea Launch is a provider of commercial launch services to the U.S. and international satellite payload markets. Sea Launch Company, of Long Beach, California, serves as the General Partner. The Sea Launch limited partners are: Boeing, of Seattle, Washington; RSC Energia, of Russia; Kværner, of Norway; and SDO Yuzhnoye/PO Yuzhmash, of Ukraine, all of which are world leaders in their respective aerospace and maritime fields. Sea Launch launches from a mobile, ocean-based platform in the Central Pacific Ocean, in international waters, at Latitude 0° and Longitude 154° W. The FAA has granted Sea Launch eight launch specific licenses and one launch operator license. Sea Launch has conducted eight launch missions since receiving its first FAA license in March 1999.

Sea Launch has much at stake in this proceeding. Sea Launch is currently the only U.S. commercial satellite launch provider launching from a non-federal range, which means that Sea Launch is the only U.S. satellite launch provider to be affected by proposed Part 415,

Subpart F, of the NPRM at this time. Moreover, Sea Launch relies on foreign technologies and processes, which means that many of the baseline requirements in the NPRM/SNPRM either do not apply to or cannot be satisfied by Sea Launch. Where Sea Launch cannot meet the requirements, the FAA proposes to require that Sea Launch “clearly and convincingly” demonstrate that its approach achieves an “equivalent level of safety.” While Sea Launch in previous license applications to the FAA has demonstrated an equivalent level of safety, Sea Launch is very concerned that the new standards being proposed by the FAA for the safety showing will impose additional and undue burdens on Sea Launch in maintaining the current launch operator license and obtaining new licenses in the future.

Sea Launch proposes that the FAA make several changes to the regulations before publishing the Final Rule. First, the highly detailed technical information on methods and analysis, contained in NPRM/SNPRM Appendices A-I, should be placed in Advisory Circulars (“AC”), and not be codified in the Final Rule. Second, unduly burdensome requirements should be deleted or modified. Third, unnecessary and unworkable criteria for relief from regulatory requirements should be deleted or revised. Sea Launch believes these changes are critical. *Excessive detail, undue regulatory burdens, and unworkable relief criteria are in direct conflict with the FAA’s statutory mandate to promote the launch industry and are not justified on safety grounds.*

Sea Launch urges the FAA not to rush to adopt a Final Rule. Rather, the FAA should issue a further Supplemental Notice of Proposed Rulemaking. There is ample precedent for this approach.’ No safety concern compels the adoption of a Final Rule at this time. Commercial launch operators have a perfect safety record. Moreover, significant issues already raised by industry remain unresolved which the FAA proposes either not to address or to resolve in the Final Rule. The notice and comment requirement of the Administrative Procedure Act (“APA”) prohibits the FAA from imposing new requirements in a Final Rule without affording industry adequate notice and an opportunity to comment.² Furthermore, courts will strike down agency action that failed to consider relevant factors or was the result of a clear error of judgment.³

¹ See, e.g., 67 Fed. Reg. 44119 (Jul. 1, 2002) (where the FAA issued a second supplemental NPRM concerning a previously proposed Airworthiness Directive applicable to certain DC-9 and MD-88 aircraft). See also 61 Fed. Reg. 66238 (Dec. 17, 1996) and 62 Fed. Reg. 28318 (where the FAA issued a second supplemental NPRM in connection with Jetstream-related Airworthiness Directives affecting landing gear inspections).

² 5 U.S.C. § 553(b), (c) (2002). See *Chrysler Corp. v. Brown*, 441 U.S. 281 (1979) (providing that 5 U.S.C. § 553 “specifies that an agency shall afford interested persons general notice of proposed rulemaking and an opportunity to comment before a substantive rule is promulgated.”). *Id.* at 313. See also *State of Alaska v. DOT*, 868 F.2d 441, 445 (D.C. Cir. 1989) (stating that the APA provides that certain agency rules cannot be given effect unless promulgated through notice and comment procedures).

³ See, e.g., *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). See also *Rocky Mountain Helicopters, Inc. v. FAA*, 975 F.2d 736 (10th Cir. 1992) (finding that the FAA had acted arbitrarily and capriciously). The court stated that “an agency action is arbitrary and capricious if the agency fails to demonstrate in the record that it has examined the relevant data and

In reviewing these comments, the FAA should be mindful of the conclusion it reached in the FAA Regulatory Evaluation of the NPRM/SNPRM that the rulemakings will produce few safety benefits. The FAA concluded that it “*does not expect there to be any change in safety benefits*” as a result of the NPRM.⁴ It further concluded with respect to the SNPRM that the safety benefits to be derived from the rulemaking are “*some additional safety benefits associated with licensed commercial launches from the Eastern Range only.*”⁵ What then is the justification for this rulemaking effort?

2. EXCESSIVE DETAIL IN THE NPRM/SNPRM DOES NOT ENHANCE SAFETY AND ALSO CONFLICTS WITH THE FAA’S MANDATE TO STREAMLINE REGULATIONS

The FAA proposes to include in the regulations highly detailed technical information on methods for conducting flight safety analyses. See NPRM/SNPRM Appendices A-I. While the FAA labels Appendices A-I “requirements,” the FAA clearly recognizes that information contained in Appendices A-I is by its very nature non-binding guidance material. The proper place for non-binding guidance materials is Advisory Circulars. Using Advisory Circulars would satisfy the FAA’s mandate for streamlining of regulations of launch operations. It also would allow the launch industry to promote safety through the kind of flexible regulatory approach utilized for four decades in the aviation arena. The approach has worked extremely well for aviation and there is no reason to depart from this approach here.

2.1. The SNPRM/NPRM Includes Excessive Detail

Close to one hundred pages of highly detailed technical information on methods and procedures for performing the analyses required in the NPRM/SNPRM are currently contained in Appendices A-I. These appendices, which the FAA proposes to include in the Final Rule, include detailed technical text accompanied by mathematical formulae, calculations and computations and highly complex scientific and technical tables and figures. Appendices A-I are as follows:

- SNPRM, Part 417, Appendix A, Flight Safety Analysis Methodologies and Products. It contains highly detailed technical information on methodologies for accomplishing the requisite safety analyses. It describes in great detail methods for performing

articulated a satisfactory explanation for its action.” *Id.* at 737 (citing *Motor Vehicle Mfrs. Ass’n*, 463 U.S. 29).

⁴ Licensing and Safety Requirements for Launch, Notice of Proposed Rulemaking, 65 Fed. Reg. 63922 (Oct. 25, 2000) (“NPRM”), at 63963. Emphasis added.

⁵ Federal Aviation Admin., Initial Regulatory Evaluation, Initial Regulatory Flexibility Determination, Trade Impact Assessment, and Unfunded Mandates Assessment for the Licensing and Safety Requirements for Launch, SNPRM, Final Report (Feb. 15, 2002) (“FAA SNPRM Regulatory Evaluation”), at 45. Emphasis added.

trajectory analysis, malfunction ~~turn~~ analysis, debris analysis, flight safety limits analysis, straight up time analysis, no longer terminate gate analysis, data loss flight time analysis, time delay analysis, and flight hazard area analysis.

- NPRM, Part 417, Appendix B, Methodology for Performing Debris Risk Analysis. It contains highly detailed technical information on methodologies and equations for calculating the Ec for the debris risk analysis.
- NPRM, Part 417, Appendix C, Flight Safety Analysis for an Unguided Suborbital Rocket Flown with a Wind Weighting Safety System and Hazard Areas for Planned Impacts for All Launches. It contains highly detailed technical information on methodologies for computing flight hazard areas for impacting stages and components.
- NPRM, Part 417, Appendix D, Flight Termination System Components and Circuitry. It contains highly detailed performance requirements and design standards for flight safety systems.
- NPRM, Part 417, Appendix E, Flight Termination System Component Testing and Analysis. It contains requirements for qualification, acceptance, and age surveillance testing of flight termination system components.
- NPRM, Part 417, Appendix F, Flight Termination System Electronic Piece Parts. Appendix F contains requirements that apply to electronic piece parts used in a flight termination system.
- NPRM, Part 417, Appendix G, Natural and Triggered Lightning Flight Commit Criteria. This appendix provides flight commit criteria to protect against natural lightning and lightning triggered by the flight of a launch vehicle.
- NPRM, Part 417, Appendix H, Safety Critical Computing Systems and Software. This appendix contains safety requirements for all flight systems where computing systems perform or potentially perform any software safety critical function as defined in this appendix. A launch operator shall ensure that any computing system that has a software safety critical function is in accordance with this appendix.
- NPRM, Part 417, Appendix I, Methodologies for Toxic Release Hazard Analysis. Appendix I provides methodologies for performing toxic release hazard analysis for the flight of a launch vehicle.

The highly detailed technical information contained in these appendices clearly does not belong in the Code of Federal Regulations. It belongs instead in ACs. While the FAA

refers to Appendices A-I as “requirements”⁶ and obviously intends to place the information in the Final Rule,⁷ the FAA through statements in the NPRM/SNPRM, recognizes that this information by its nature is non-binding guidance. For example, the FAA in commenting on Appendix A, states that the methods set forth provide one “acceptable means of satisfying the requirements of subpart C”⁸ The FAA recognizes that “methodologies implemented to satisfy the performance requirements may vary.”⁹

2.2. Detailed Information on Methods Belongs in Advisory Circulars

Highly detailed technical information on methods, such as that contained in NPRM/SNPRM Appendices A-I, belongs in non-binding guidance documents, e.g., ACs. The application or use of the methods prescribed in Appendices A-I, or alternate methods where the prescribed baseline methods do not apply, involves highly sophisticated mathematical modeling, calculations, and computations and engineering considerations. Clearly, the judgments and thought processes involved in performing or engaging in such modeling, calculations, computations, or considerations should not be subject to regulatory enforcement. The issue for enforcement is whether a specified standard of safety is satisfied; the method of complying with that standard does not lend itself to enforcement. Rather than attempting to provide oversight through regulation, the FAA should use ACs.

The FAA recognizes the use of ACs as appropriate for detailed technical information on procedures, methods, and acceptable practices. According to the FAA, ACs are vehicles used to communicate to the aviation and space industries “guidance such as methods, procedures, and practices acceptable to the Administrator for complying with regulations and grant requirements.”¹⁰ Is this not precisely what Appendices A-I entail? The SNPRM even acknowledges that “[r]ecommended FAA approaches may appear in guidance documents, such as FAA advisory circulars.”¹¹

⁶ Appendix A of the SNPRM refers to the provisions as “requirements.” Licensing and Safety Requirements for Launch, Supplemental Notice of Proposed Rulemaking, 67 Fed. Reg. 49456 (Jul. 30, 2002) (“SNPRM”), at 49502, Appx. A, § A417.1.

⁷ The fact that the FAA has published the Appendices in the *Federal Register* is not in and of itself an indication that the FAA intends for them to be binding. *Brock v. Cathedral Bluffs Shale Oil Co.*, 796 F.2d 533, 539 (D.C. Cir. 1986). The Administrative Procedure Act requires general statements of policy to be published as well. 5 U.S.C. § 552(a)(1)(D). The “real dividing point between regulations and general statements of policy is publication in the Code of Federal Regulations, which the statute authorizes to contain only documents ‘having general applicability and legal effect,’” *Brock*, 796 F.2d at 539 (quoting 44 U.S.C. § 1510 (emphasis added)).

⁸ SNPRM, at 49502, Appx. A, § A417.1. See also *id.*, at 49487.

⁹ *Id.*, at 49481.

¹⁰ Advisory Circular System, FAA Order 1320.46C (May 31, 2002) (“FAA Advisory Circular Order”), at Ch. 1, § 3(a). ACs do “not create or change a regulatory requirement.” *Id.*

¹¹ SNPRM, at 49474. ACs may also “contain explanations of regulations, other guidance material, best practices, or information useful to the aviation community.” FAA Advisory Circular Order, at Ch. 1, § 3(a).

The FAA began using ACs for the aviation industry in 1962 and has used them successfully ever since. The FAA uses ACs to convey to the aviation industry precisely the type of guidance contained in Appendices A-I on methods and analyses. For example, the FAA has issued ACs to guide the aviation community on subjects such as airworthiness approval, navigation, landing systems, composite aircraft structures, engine design, collision avoidance, system design analysis, manufacturing process, qualification testing, test procedures for allowable air speed, airborne communications, and vibration evaluation.¹² More recently, the use of ACs has been expanded to the space industry.¹³ The AC system “provides a single, uniform, agency-wide system that the [FAA] uses to deliver advisory material to FAA customers, industry, the aviation community and the public.”¹⁴ *There is no reason to adopt a different approach here.*

2.3. Placing Detailed Information In Advisory Circulars Protects Public Safety

Placing Appendices A-I in ACs is entirely consistent with the FAA’s safety mandate as evidenced by the FAA’s past practice. The FAA is responsible for ensuring that commercial launches are consistent with “public health and safety, safety of property, and national security and foreign policy interests of the United States”¹⁵ For the duration of commercial operations, both the FAA and licensed launch operators have relied on non-binding guidelines and rules maintained by the federal ranges. The public

¹² *See, e.g.*, AC 20-130A, Airworthiness Approval of Navigation or Flight Management Systems Integrating Multiple Navigation Sensors (Jun. 14, 1995); AC 23-7, Substantiation for an Increase in Maximum Weight, Maximum Landing Weight, or Maximum Zero Fuel Weight (Jul. 1, 1987); AC 90-79, Recommended Practices and Procedures for the Use of Electronic Long-Range Navigation (Jul. 14, 1980); AC 20-57A, Automatic Landing Systems (ALS) (Jan. 12, 1971); AC 20-99, Anti-Skid and Associated Systems (May 27, 1977); AC 20-107A, Composite Aircraft Structure (Apr. 25, 1984); AC 20-128A, Design Considerations for Minimizing Hazards Caused by Uncontained Turbine Engine and Auxiliary Power Unit Rotor and Fan Blade Failures (Mar. 25, 1997); AC 20-131A, Airworthiness and Operational Approval of Traffic Alert and Collision Avoidance Systems (TCAS II) and Mode S Transponders (Mar. 29, 1993); AC 21-36, Quality Control for the Manufacture of Non-Metallic Compartment Interior Components (Nov. 15, 1991); AC 21-37, Primary Category Aircraft (Jun. 14, 1994); AC 25.1309-1A, System Design Analysis (Jun. 21, 1988); AC 33.15-1, Manufacturing Process of Premium Quality Titanium Alloy Rotating Engine Components (Sep. 22, 1998); AC 20-66, Vibration Evaluation of Aircraft Propellers (Jan. 29, 1970); AC 20-134, Test Procedures for Maximum Allowable Airspeed Indicators (Feb. 6, 1990); AC 20-135, Powerplant Installation and Propulsion System Component Fire Protection Test Methods, Standards and Criteria (Feb. 15, 1990); AC 23-2, Flammability Tests (Aug. 20, 1984); AC 20-62D, Eligibility, Quality, and Identification of Aeronautical Replacement Parts (May 24, 1996); AC 20-67B, Airborne VHF Communications Equipment Installations (Jan. 16, 1986); and AC 25-11, Transport Category Airplane Electronic Display Systems (Jul. 16, 1987) (providing examples of ACs used to set forth methodologies and other acceptable means for complying with Federal Aviation Regulations).

¹³ *See, e.g.*, Licensing Test Flight Reusable Launch Vehicle Missions, AC 431.35-3 (Aug. 15, 2002); Reusable Launch and Reentry Vehicle System Safety Process, AC 431.35-2 (Sep. 2000); Expected Casualty Calculations for Commercial Space Launch and Reentry Missions, AC 431.35-1 (Aug. 30, 2000); License Application Procedures, AC 413-1 (Aug. 16, 1999); Part 440 Insurance Conditions, AC 440-1 (Nov. 3, 1998).

¹⁴ FAA Advisory Circular Order, at i.

¹⁵ 49 U.S.C. § 70105(a)(1) (2002).

safety record for commercial launch operations has been nothing short of perfect. Launch operators are responsible for the safety of their launch operations and for compliance with the FAA’s public safety requirement. However, that does not mean that every technical detail on how to satisfy requirements needs to be a regulatory requirement.

The use of ACs may also enhance public safety because of the flexibility and individual tailoring they allow for in complying with the FAA’s safety requirements. The following is an example from the aviation arena of how such flexibility and individual tailoring is critical to ensuring safety: The basic standards for determining whether a hazard exists at a particular airport are set forth in regulations.¹⁶ However, guidance on how to meet these standards at individual airports is set forth in a variety of FAA publications, including ACs. This approach allows for proper consideration of the individual characteristics of the different airports with respect to terrain, local conditions, the length of the runway, the extent of the runway protection zone and the so-called “imaginary surfaces” that surround the runway, etc. Similarly, placing Appendices A-I – and eventually also alternate methods – in ACs will enhance safety by allowing due consideration to differences in launch vehicle technologies and procedures.

2.4. **Placing Excessive Detail in the Regulations Conflicts With the FAA’s Streamlining Mandate**

Placing excessive detail in regulations conflicts with the FAA’s streamlining mandate. A key purpose of Title 49, Subtitle IX, Commercial Space Transportation, Chapter 701, Commercial Space Launch Activities, 49 U.S.C. §§ 70101-70121, commonly known as the Commercial Space Launch Act (“CSLA”), is to streamline the regulatory regime for commercial launches. It is “to encourage the United States private sector to provide launch vehicles, reentry vehicles, and associated services by . . . *simplifying* and expediting the issuance and transfer of commercial licenses”¹⁷ Simplification was a critical Congressional objective in passing the CSLA, as Congress sought to remedy the then-existing situation involving a multitude of complex, confusing, and sometimes conflicting licensing requirements.¹⁸ In addition to redressing the then-current situation, the Congressional call for simplification and expedited licensing was clearly intended also to guide future regulatory conduct.

The purpose of the CSLA is thwarted by including excessive detail contained in NPRM/SNPRM Appendices A-I in the Final Rule. The purpose was to have a clear, manageable licensing and regulatory regime, easy to understand and comply with, that would facilitate licensing. Including Appendices A-I in regulations, instead, will create an

¹⁶ 14 C.F.R. Part 77 (2002).

¹⁷ 49 U.S.C. § 70101(b)(2)(A). Emphasis added.

¹⁸ H. REP. NO. 98-816, at 7; *see also id.*, Appx. A (listing the authorities launch license applicants would need to consult).

unwieldy, confusing, and unmanageable regime. For example, every time a launch operator needs or wishes to use an alternate *method* for accomplishing a safety analysis, it needs to show clear and convincing evidence of an equivalent level of safety. Appendix A, § A417.3, provides that the “requirements contained in this appendix apply to a launch operator and the launch operator’s flight safety analysis unless the launch operator clearly and convincingly demonstrates that an alternative approach provides an equivalent level of safety.” Clearly, it is not workable to have a launch operator make a formal safety demonstration every time it cannot meet any baseline procedure set forth in Appendix A.

Moreover, every time an applicant needs or wishes to change *any* method, it needs to submit a formal license modification. SNPRM § 417.203(b) requires that the licensee “submit any change to the methods to the FAA as a request for license modification before the launch to which the proposed change would apply.” There is no time limit for FAA processing of license modifications! Clearly, this is not streamlining. The approach also runs counter, not only to the FAA’s streamlining mandate, but also to other basic tenets of the FAA’s charter, including the requirements to facilitate licensing and promote the launch industry.”

2.5. Placing Excessive Detail in the Regulations Conflicts With the DOT’s Streamlining Policy

Placing excessive detail in regulations also conflicts with the Department of Transportation’s (“DOT”) own policies and procedures, which apply to the FAA. These policies stress the need for simplification. These policies and procedures direct that the regulation be as “short and uncomplicated as possible.”²⁰ Before issuing the regulation, the regulation should be “coordinated as required within [DOT] and between [DOT] and other Federal agencies *to eliminate or minimize unnecessary duplication, inconsistency, and complexity . . .*”²¹ To codify the excessive amount of detailed information currently found in the NPRM/SNPRM is contrary to DOT’s own policies and procedures.

2.6. The Excessive Detail Must be Viewed in Light of the FAA’s Civil Penalty Regulations

The excessive detail becomes a particular concern in light of the FAA’s civil penalty authority and the FAA’s active enforcement of its civil penalty rules. A minute overstep of any detail in the SNPRM/NPRM, when it becomes an FAA regulation, carries the

¹⁹ 49 U.S.C. §§ 70101(b), 70103(b).

²⁰ Department of Transport., Policies and Procedures for Simplification, Analysis, and Review of Regulations, Order, DOT 2100.5 (May 22, 1980), sec. 7(c).

²¹ *Id.* Emphasis added.

sanction of penalty. The CSLA provides that “[a] person may not violate . . . a regulation prescribed under [the CSLA].”²² A person the FAA “finds to have violated a regulation issued under the [CSLA] is liable to the United States government for a civil penalty of not more than \$100,000 A separate violation occurs for each day the violation continues.”²³ The FAA’s Civil Penalty Regulations, issued on January 10, 2001, reiterate the sanctions prescribed under the CSLA and set forth detailed procedures for prosecuting civil penalties.²⁴

Placing every small detail in regulations thus exposes launch operators to ongoing sanctions with respect to matters that may have no impact whatsoever on safety. This course of action could have severe financial consequences for the launch industry, which the FAA is charged with promoting,²⁵ and would overwhelm the FAA’s oversight function without commensurate enhancement in safety. This was hardly the purpose Congress intended for Title **49**, Subtitle IX, Commercial Space Transportation, Chapter 701, Commercial Space Launch Activities, Section 70115, Enforcement and Penalty, when it passed the CSLA.

2.7. **Appendices are Not Appropriate Vehicles for Imposing Regulations**

Finally, if the FAA nonetheless insists on imposing NPRM/SNPRM Appendices **A-I** as binding regulatory requirements, then appendices are not the appropriate vehicle. According to the Office of the Federal Register’s Document Drafting Handbook, the FAA “may not use the appendi[ces] as a substitute for regulatory text.”²⁶ An appendix may be used “to present [s]upplemental, background, or explanatory information which illustrates or amplifies a rule which is complete in itself.”²⁷ Regulatory material should be presented “as an amendment to the [Code of Federal Regulations], not disguised as an appendix. Material in an appendix may not amend or affect portions of [Code of Federal Regulations] text; or introduce new requirements or restrictions into . . . regulations.”²⁸

²² 49 U.S.C. § 70115(a).

²³ 14 C.F.R. § 406.9(a). *See also* 49 U.S.C. § 70115(c)(1).

²⁴ **66** Fed. Reg. 2176 (Jan. 10, 2002) (codified at 14 C.F.R. Part 406).

²⁵ 49 U.S.C. § 70103(b)(1).

²⁶ Office of the Federal Register (OFR), Nat’l Archives & Records Admin., Document Drafting Handbook (DDH) (Oct. 1998), at **7-9**. The DDH “provides guidance to help [Federal agencies] create and submit documents that comply with OFR’s publication requirements.” http://www.archives.gov/federal_register/document_drafting_handbook/document_drafting_handbook.html.

²⁷ Document Drafting Handbook, at 7-9.

²⁸ *Id.*

3. THE NPWS NPRM IMPOSES UNDUE BURDENS THAT CONFLICT WITH THE FAA'S MANDATE TO PROMOTE THE LAUNCH INDUSTRY AND DO NOT ENHANCE SAFETY

The NPRM/SNPRM imposes undue administrative, financial, and operational burdens that hamper the industry and cannot be justified on safety grounds. Indeed, the FAA astonishingly has concluded that it does not expect the NPRM to bring any change in safety benefits and that the SNPRM offers some safety benefits at the Eastern Ranges only. Yet, the FAA has undertaken this monumental regulatory effort and, in the process, has proposed imposing severe administrative, financial, and operational burdens on a launch industry already suffering from economic depression.

The United States cannot afford to inflict harm on its commercial space industry. The commercial space industry is essential to ensuring continued assured access to space for vital national security space assets. Commercial and military launch programs are highly intertwined. The Evolved Expendable Launch Vehicle (“EELV”) program relies on the commercial success of the Atlas V and Delta IV programs. These are times of heightened national security concerns, which the FAA cannot disregard, especially when the proposed regulations offer few, if any, discernible benefits for public safety.

3.1. NPRM/SNPRM, Part 415, Subpart F, Imposes Undue Burdens

NPRM Part 415, Subpart F, contains licensing requirements that are unduly burdensome, unreasonable, or unmanageable and plainly unnecessary to protect public safety. As the only satellite launch provider using a non-Federal range and thus to be affected by Subpart F, Sea Launch has much at stake when making these comments. Sea Launch is also uniquely qualified to comment on proposed Subpart F, as the FAA, in large measure, applied Subpart F to Sea Launch during its application for a launch operator license in 2002. Based on this experience, Sea Launch proposes several modifications to the NPRM. Some of these modifications were previously proposed by Sea Launch; however, the FAA failed altogether to address Subpart F and Sea Launch's comments in the SNPRM.

In considering the following proposed modifications, Sea Launch urges the FAA to be mindful of the CSLA requirement that the FAA “shall establish procedures and timetables that expedite review of a license application and reduce the regulatory burden for an applicant.”²⁹

- NPRM § 415.113 requires that an applicant's launch license application Safety Review Document describe how the applicant will satisfy personnel certification program requirements and contain “any program documentation used to implement

²⁹ 49 U.S.C. § 70105(c).

the personnel certification program,” among other requirements. The requirement for documentation is excessive and should be deleted. Sea Launch proposes instead that applicants be required to make documents available to the FAA upon request.

- o NPRM § 415.115(a)(1) provides that an applicant must submit flight safety analysis data “no later than 18 months” prior to launch. This requirement is not compatible with current commercial launch business timelines. In some cases, the time between launch contract signing and launch date may be as short as six months. A timeline requirement such as this may cause U.S. launch operators to lose business to foreign competitors which are not subject to such rigid requirements. Sea Launch proposes that the submission requirement be modified to six months.
- NPRM § 415.119 provides for numerous “launch plans” to be part of an applicant’s launch license application Safety Review Document.³⁰ This would require submission to the FAA of a host of long and detailed plans amounting to hundreds of pages, including: Emergency Response Plan; Accident Investigation Plan; Launch Support Equipment and Instrumentation Plan; Configuration Management and Control Plan; Communications Plan; Frequency Management Plan; Security and Hazard Area Surveillance Plan; Public Coordination Plan; Local Agreements and Plans; Test Plans; Countdown Plan; Launch Abort/Delay Recovery Plan; License Modification Plan. These plans would then become part of the license application and subject to the “continuing accuracy requirement” and license modification requirement in 14 C.F.R. 415.73. Failure to comply may result in a penalty under 49 U.S.C. § 70115 and 14 C.F.R. § 406.9. Sea Launch proposes instead that license applicants, rather than submitting the launch plans as part of the Safety Review Document, be allowed to retain these plans and be required to make them available to the FAA upon request.
- Problems with the requirement to include launch plans in the Safety Review Document is exacerbated by the companion requirement to “incorporate each launch safety rule established in accordance with § 417.113 of this chapter into each related launch safety plan.”³¹ NPRM § 417.113 provides that launch rules “must include flight safety rules that govern the flight of the launch vehicle and ground safety rules to be followed for each preflight ground operation”³² The precise relationship between Part 415 and Part 417 for purposes of preparing a license application is not entirely clear, when, as here, some of the Part 417 requirements that apply to the *implementation* of the launch mission are at the same time license application requirements.

³⁰ The Safety Review Document “must contain the public safety related launch plans required” NPRM, at 63969, § 415.119(a).

³¹ *Id.*

³² *Id.*, at 63982, § 417.113(a).

- NPRM § 415.121 provides that an applicant’s Safety Review Document “must contain a launch schedule that identifies each test, review, rehearsal, and safety critical preflight operation to be conducted for each launch”³³ As discussed in its comments on the NPRM, Sea Launch “proposes that an applicant/licensee be required to provide a top-level launch schedule, because the schedules change daily, and detailed schedules are 10-20pages.”³⁴
- NPFW § 415.123 provides that an applicant’s Safety Review Document “must describe all computing systems and software that perform a software safety critical function. . . .” For each such software safety critical function, the NPRM requires, among other things, detailed descriptions of software and hardware, flow charts and diagrams of interfaces, logic diagrams and software design descriptions, and software development plans. These information requirements are excessive. Sea Launch instead proposes that an applicant only be required to provide general information on its computing systems and software.
- NPRM § 415.127 provides that a launch applicant’s flight safety system design and operation data “must be submitted no later than eighteen months before the applicant brings any launch vehicle to a proposed launch site.” The deadline is unduly burdensome considering that the time limit for processing a license application is 180 days. Furthermore, this proposed timeline is not compatible with today’s commercial launch timelines, which can be as short as six months fi-om contract signing to launch.
- NPRM § 415.127 also requires detailed information on an applicant’s flight safety system, including descriptions of the flight safety system, subsystems and components, block diagrams that identify all subsystems, functional diagrams of each subsystem, component location drawings, and flight termination system installation procedures. The information requirements of this section are excessive and do not provide a commensurate benefit to public safety, especially when launch operators use reliable and known flight safety systems. Sea Launch instead proposes that an applicant only be required to provide general data on its flight safety system design and operation.

3.2. NPRM/SNPRM, Part 417 Imposes Undue Burdens

Also NPRM/SNPRM, Part 417 contains several requirements that are unduly burdensome, unmanageable, or unreasonable and plainly unnecessary. Below are some examples:

³³ *Id.*, at 63971, § 415.121(a).

³⁴ Comments of Sea Launch Company, L.L.C. (Apr. 23, 2001), NPRM, Docket No. FAA 2000-7953, at 4.

- SNPRM § 417.203(c) contains unreasonable and unmanageable criteria for processing of license applications. It provides that the **FAA** “will not find the launch operator’s application for a license or license modification sufficiently complete to begin review . . . until the **FAA** approves the alternate flight safety analysis.” However, under SNPRM, § 417.201(d), the **FAA** “will determine during the licensing process which of the analyses required by [Subpart C] apply.” Does this not result in a situation where the licensing process never can begin?³⁵ This extraordinary administrative latitude is in direct conflict with the Congressional mandate to process license applications in 180 days.³⁶
- NPRM § 417.9(a) contains unreasonable requirements for license modifications. It provides that *any* change to the licensee’s safety review document requires an amendment. It states that “[a]ny change to the information in the licensee’s safety review document that is not identified as a launch specific update must be submitted to the FAA as a request for license modification in accordance with § 415.73 . . . and the license modification plan required by § 415.119(n)”³⁷ This requirement is excessive, especially considering the detailed requirements for plans, schedules, etc., which are constantly evolving documents. Sea Launch proposes to limit the requirement to any material change. This approach is consistent with 14 C.F.R. § 415.73(b), which requires a license modification when the “representation contained in the license application [including the safety review document] that is material to public health and safety or safety of property would no longer be accurate and complete”³⁸ The approach is further consistent with the “continuing accuracy” requirement in 14 C.F.R. § 415.73(a).³⁹
- A requirement to submit a license modification request could lead to an indefinite delay of a licensee’s launch. While Section 70105 of the **CSLA** imposes a time limit of 180 days on the processing of a license application by the **FAA**, the NPRM/SNPRM proposes that this requirement not apply to modifications. The

³⁵ 14 C.F.R. § 413.11. The reviews and evaluations conducted by the **FAA** include a policy review, payload review, safety evaluation, financial responsibility determination and an environmental review. Office of the Associate Administrator for Commercial Space Transportation, **FAA**, About the Licensing Process, http://ast.faa.gov/lrra/about_lrra.htm (Oct. 9, 2002). The launch licensing process involves an initial screening of “an application to determine whether the application is sufficiently complete to enable the **FAA** to initiate the reviews or evaluations required” 14 C.F.R. § 413.11. After the initial screening, the **FAA** either: 1) accepts the application and begins the required reviews and evaluations; or 2) rejects the application if the **FAA** finds the “application so incomplete or indefinite as to make initiation of the reviews or evaluations required for a licensing determination . . . inappropriate.” *Id.* § 413.11(a)-(b).

³⁶ 49 U.S.C. § 70105(a). The **FAA**’s regulations require that the **FAA** “make[] a determination on a license application within 180 days of receipt of an accepted application.” 14 C.F.R. § 413.15.
³⁷ NPRM, at 63979, § 417.9(a).

³⁸ 14 C.F.R. § 415.73(b).

³⁹ A launch licensee “is responsible for the continuing accuracy of representations contained in its application for the entire term of the license. A launch licensee must conduct a licensed launch and carry out launch safety procedures in accordance with its application.” 14 C.F.R. § 415.73(a).

FAA has taken the position that it “does not . . . appear that the FAA is burdened by the same time constraints as a licensee facing an imminent launch if that licensee wishes to effectuate a change.”⁴⁰

- SNPRM § 417.203(b) imposes an unworkable requirement for license modification. It requires that the licensee “submit any change to the methods to the FAA as a request for license modification before the launch to which the proposed change would apply. Section 415.73 contains requirements governing a license modification.” This requirement is clearly excessive.
- NPRM § 417.9(b) provides for a variety of launch specific updates and reports prior to each launch. Some of these requirements, and especially the timeframes imposed, are unduly burdensome. For example, NPRM, § 417.9(b)(4) provides that a launch operator is required to report “any” changes or additions to launch plans no later than 15 days before the “associated activity is to take place.” Launch plans include: Emergency Response Plan; Accident Investigation Plan; Launch Support Equipment and Instrumentation Plan; Configuration Management and Control Plan; Communications Plan; Frequency Management Plan; Security and Hazard Area Surveillance Plan; Public Coordination Plan; Local Agreements and Plans; Test Plans; Countdown Plan; Launch Abort/Delay Recovery Plan; and License Modification Plan.⁴¹ Again, there should be a materiality standard for this requirement.
- NPRM § 417.11 requires a number of certifications and verifications the launch operator would have to submit in addition to its existing responsibilities under the CSLA and FAA regulations. For example, a launch operator “shall verify that the launch is conducted in accordance with the terms and conditions of the launch license and the requirements of this part.”⁴² Furthermore, the launch operator “shall verify that all required license related information was submitted to the FAA and that the information reflects the current status of the licensee’s systems and processes as they are being implemented for that launch.”⁴³ These requirements are excessive when there are abundant regulations in place to ensure compliance and whose violation is sanctioned by civil penalty.

3.3. Burdensome Regulatory Requirements do Not Enhance Safety

Burdensome regulatory requirements such as those discussed above do not offer any safety benefits. That the FAA has reached the same conclusion is evidenced by the Regulatory Evaluation Summary for the NPRM – upon which the rulemaking effort is

⁴⁰ NPRM, at 63955 n.16. The FAA states that it “will, as a matter of policy, treat 180 days as an internal goal by which to complete its review.” *Id.*

⁴¹ NPRM, at 63969, § 415.119, 63967, § 415.115(d), and 63982, § 417.111.

⁴² *Id.*, at 63980, § 417.11(a).

⁴³ *Id.*, at 63980, § 417.11(b).

based – where the FAA states that it “does not expect there to be any change in safety benefits” as a result of the NPRM!⁴⁴ The SNPRM’s Regulatory Evaluation Summary concludes that the SNPRM would result in “some additional safety benefits associated with licensed commercial launches from the Eastern Range only.”⁴⁵ So why is the FAA imposing such stringent requirements? As noted above, the public safety record for U.S. commercial launch operations is perfect and strict requirements are not warranted on safety grounds.

3.4 **Burdensome Requirements Conflict With the FAA’s Mandate to Promote the Launch Industry and Minimize Regulation**

Congress directed that in carrying out its responsibilities under the CSLA, the FAA “shall . . . encourage, facilitate, and promote commercial space launches . . . by the private sector; and . . . take actions to facilitate private sector involvement in commercial space transportation activity”⁴⁶ To that end, Congress directed that the FAA regulate the commercial launch industry “only to the extent necessary” to protect public safety and to ensure compliance with United States national security and foreign policy interests.⁴⁷ Congress passed the CSLA to “promote growth in the United States by encouraging the private sector to provide space launch services”⁴⁸ Neither the U.S. economy nor the launch industry can afford regulatory impositions that impede economic growth and curtail expansion in the launch business, especially when there is no commensurate benefit to public safety.

3.5 **The Launch Industry is in a State of Depression and Does Not Need Additional Regulatory Burdens**

The launch industry is in a state of financial depression. Plagued by slowdowns in U.S. and world economies and extreme weakness in customer demand for launch services, launch companies are struggling to sustain a viable business. A recent trade press article summed up the situation as follows:

The current market for commercial launcher services is anemic. An oversupply of launch service providers has sparked fierce pricing competition that is forcing these companies to swallow losses or risk losing contracts to rivals One scenario for the industry is for at least one launch service provider, or more than one, to close down.⁴⁹

⁴⁴ *Id.*, at 63963.

⁴⁵ SNPRM, at 49493.

⁴⁶ 49 U.S.C. § 70103(b). Emphasis added.

⁴⁷ *Id.* § 70101(a)(7).

⁴⁸ H. REP. NO. 98-816, at 7.

⁴⁹ Paul Dykewicz, *Cutthroat Pricing Slams Launchers*, *SATELLITE NEWS* (Jul. 3, 2002).

The future does not look much brighter. The demand for launch services is tied to the need for satellite payloads, which in turn depends on the progress in the telecommunications and information technology industries, currently among the most depressed sectors of the economy. Accordingly, launch forecasts for the decade paint a grim picture. The 2002 Commercial Space Transportation Forecasts (May 2002) prepared by the Commercial Space Transportation Advisory Committee (“COMSTAC”) and the FAA, “project that an average of nearly 27 commercial space launches worldwide will occur annually from 2002 to 2011. The combined forecasts are down 16.5 percent from those of last year, which projected an average of 32 launches per year from 2001-2010 Specifically, GSO launch demand is down about 15 percent compared to last year’s forecast and the launch demand for NGSO is down about 21 percent.”⁵⁰

In a depressed economic condition and with no brighter prospects for the foreseeable future, the U.S. launch industry does not need excessive, burdensome regulatory requirements that do not offer any safety benefit. All that achieves is worsening the situation for an industry which the FAA is charged by statute to promote. It plays right to the hands of competitors. It allows Arianespace to further solidify and increase its lead in the commercial market” and opens the door to competitors from countries with an emerging launch industry preparing for future business opportunities.

4. CRITERIA FOR RELIEF SET FORTH IN THE NPRM/SNPRM ARE UNWORKABLE AND INCONSISTENT

Criteria for relief from regulatory requirements must be workable and consistent in order to be meaningful. Those being proposed are not. While the FAA correctly acknowledges that the baseline requirements imposed by regulation cannot be satisfied by all launch operators, e.g., because their technologies differ, the FAA fails to provide sensible relief criteria. Below, Sea Launch proposes specific modifications to these criteria which protect public safety and are consistent with the FAA’s mandate to facilitate launch licensing and promote the commercial launch industry.

4.1. The Requirement For a “Clear and Convincing” Demonstration of “Equivalent Level of Safety,” as Defined, is Not Workable

The FAA proposes that launch operators that cannot perform the prescribed analyses in SNPRM, Part 417, Subpart C, Flight Safety Analysis, be required to provide a “clear and convincing demonstration that its proposed analysis provides an equivalent level of

⁵⁰ 2002 COMMERCIAL SPACE TRANSPORTATION FORECASTS (May 2002), at 1.

⁵¹ See FEDERAL AVIATION ADMIN., COMMERCIAL SPACE TRANSPORTATION: YEAR IN REVIEW 2001 (Jan. 2002), at 1 (providing that Arianespace captured half of the worldwide market for commercial orbital launches in 2001).

safety to that required”⁵² Likewise, launch operators that cannot meet the requirements of NPRM, Part 417, Subpart D, Flight Safety System, must “demonstrate[] clearly and convincingly that the proposed launch achieves a level of safety that is equivalent to satisfying all the requirements of this subpart and subpart D”⁵³ The FAA will “determine during the licensing process which of the analyses required by this subpart apply.”⁵⁴

Because Sea Launch launches from a non-federal range and relies on foreign technology,⁵⁵ it cannot meet all of the FAA’s proposed baseline requirements for analysis in Subpart C and flight safety systems in Subpart D. Accordingly, Sea Launch will often be confronted with, and be uniquely burdened by, the requirement to demonstrate “clearly and convincingly” an “equivalent level of safety.” While the FAA in the past has shown flexibility in the licensing of Sea Launch, there is no assurance that this flexibility will continue once the proposed requirement is codified. Quite the opposite. Accordingly, to ensure the necessary flexibility for FAA enforcement of safety standards, Sea Launch proposes changes to the definition of “equivalent level of safety” and further proposes that the requirement for a “clear and convincing” demonstration be deleted.

4.1.1. “Equivalent Level of Safety”

The definition of “equivalent level of safety” is too constraining and, if strictly construed, completely unworkable. The FAA proposes to define “equivalent level of safety” as “an ‘approximately equal’ level of safety. An equivalent level of safety may involve a change to the level of expected risk that is not statistically or mathematically significant as determined by qualitative or quantitative risk analysis.”⁵⁶ If the “change to the level of expected risk” for any alternate procedure, analysis, or method cannot be “mathematically significant,” then in essence the risk cannot be different. Mathematical means “rigorously precise.”⁵⁷ Accordingly, any change would be significant.

The proposed definition also conflicts with the FAA’s approach in the aviation area, where the FAA has refrained from defining the term. Equivalent level of safety showings are provided for throughout the Federal Aviation Regulations, yet nowhere does the FAA define the term. For example, Part 21.21 of the Federal Aviation Regulations deals with

⁵² SNPRM, at 49497, § 417.203(c).

⁵³ NPRM, at 63981, § 417.107(a)(3).

⁵⁴ SNPRM, at 49497, § 417.201(d).

⁵⁵ For example, Sea Launch’s flight safety system is an autonomous thrust termination system (“TTS”). The TTS uses multiple *onboard* computers to evaluate vehicle status and performance in order to determine if a flight termination command is required. In contrast to U.S. launch technology, the TTS does not receive a flight termination command from the ground. The TTS provides for shutoff of the engine thrust in the event of a launch vehicle malfunction. Because of such differences, Sea Launch will be confronted repeatedly by the proposed requirements.

⁵⁶ SNPRM, at 49495, § 417.3.

⁵⁷ THE OXFORD AMERICAN DICTIONARY 612 (1999).

the issuance of type certificates for all types and classes of aircraft⁵⁸ and is similar to the FAA’s licensing requirement for launch vehicles.⁵⁹ It provides that an applicant which cannot meet the airworthiness requirement of the FAA regulations instead may demonstrate an equivalent level of safety.⁶⁰ This approach has been applied effectively for decades in the aviation area. See, for example, 14 C.F.R. § 21.17(2)(b) (regulations for special classes of aircraft), 14 C.F.R. § 21.29(b) (type certificates for foreign aircraft), 14 C.F.R. § 21.609(a) (deviations from technical standard orders), 14 C.F.R. § 61.31(b)(2) (type ratings for pilots), 14 C.F.R. § 121.310(b)(2)(i) and (f)(2) (emergency equipment), 14 C.F.R. § 121.335(a) and (b) (oxygen apparatus), 14 C.F.R. § 121.337(b)(2), (b)(9)(ii), and (b)(9)(iii) (protective breathing equipment), and 14 C.F.R. § 135.178(b)(2)(i) and (f)(2) (emergency equipment). *Extensive, successful experience with aviation amply demonstrates the term does not have to be defined.*

If the FAA nonetheless insists on a defining the term, Sea Launch proposes a more functional definition that also can accommodate technological advances and stand the test of time. It proposes to define “equivalent level of safety” as “substantially the same level of safety.” Sea Launch proposes to strike the remainder of the definition as this portion is both unnecessary and unworkable. Sea Launch’s definition has support in *City of Aurora v. Hunt*,⁶¹ where the court upheld an FAA final rule which prescribed requirements for approaches to landing that deviated from standard procedures. The deviation from standard procedures was permitted if an “equivalent level of safety” existed. In finding that the prescribed procedures met the “equivalent level of safety”

⁵⁸ These aircraft include: normal, utility, acrobatic, commuter, and transport category aircraft; manned free balloons; special classes of aircraft; aircraft engines; propellers. 14 C.F.R. § 21.21.

⁵⁹ *Id.*, Parts 413 and 415.

⁶⁰ 14 C.F.R. § 21.21 provides:

An applicant is entitled to a type certificate for an aircraft . . . if

(a) The product qualifies under § 21.27; or

(b) The applicant submits the type design, test reports, and computations necessary to show that the product. . . meets the applicable airworthiness, aircraft noise, fuel venting, and exhaust emission requirements of the Federal Aviation Regulations and any special conditions prescribed by the Administrator, and the Administrator finds –

(1) Upon examination of the type design, and after completing all tests and inspections, that the type design and the product meet the applicable noise, fuel venting, and emissions requirements of the Federal Aviation Regulations, and further finds that they meet the applicable airworthiness requirement of the Federal Aviation Regulations or that any airworthiness provisions not complied with are compensated for by factors that provide an equivalent level of safety, and

(2) For an aircraft, that no feature or characteristic makes it unsafe for the category in which certification is requested.

⁶¹ 749 F.2d 1457 (10th Cir. 1984).

test, the court stated: “We note initially that the part of the proposed procedure that governs approaches to [the] runway . . . is *substantially the same* as routine . . . approaches used at other airports throughout the country. Thus, nothing appears inherently unsafe”⁶²

4.1.2. A “Clear and Convincing” Demonstration

The requirement to show “clear and convincing” evidence is unnecessary and unreasonable and Sea Launch proposes that it be deleted. “Clear and convincing” evidence or proof is an evidentiary standard of proof which does not belong in launch licensing regulations. The term is defined as “[e]vidence indicating that the thing to be proved is highly probable or reasonably certain. This is a greater burden than preponderance of the evidence, the standard applied in most civil trials”⁶³ A clear and convincing demonstration is not currently required for launch licensing. It is not required by the FAA for aviation. It is also not required by the federal ranges. Finally, the requirement was imposed on launch site operators through clear administrative error.

14 CFR Part 415, Subpart F, currently governs licensing of launches at non-federal ranges. It provides that the FAA “issues a safety approval to a license applicant . . . when the FAA determines that the launch demonstrates an equivalent level of safety to that provided by a launch from a federal launch range as set forth in Subpart C of this part.”⁶⁴ There is no mention of “clear and convincing” evidence.⁶⁵ Sea Launch has received eight launch specific licenses and one launch operator license, beginning in March 1999, and conducted eight launches under Subpart F. Each time, the FAA has been satisfied with Sea Launch’s showing of equivalent level of safety. Each of Sea Launch’s launches have been conducted without incident to public safety. *There is no need to introduce this standard now. It serves no purpose. The FAA’s statement that the NPRM/SNPRM represent a codification of existing regulations is incorrect in this regard.*

The federal ranges do not impose a requirement for “clear and convincing” evidence. The Eastern and Western Range (EWR) 127-1 Range Safety Requirements (“EWR 127-1”), § 1.6.5, which governs noncompliance with range requirements, allows for three types of noncompliance: “meets intent certifications (MICs), deviations, and waivers.”⁶⁶ MICs are used “when Range Users do not meet exact EWR 127-1 requirements but do meet the intent of the requirements.”⁶⁷ To obtain a MIC, “[r]ationale for equivalent level of safety

⁶² *Id.* at 1462. Emphasis added.

⁶³ BLACK’S LAW DICTIONARY 577 (7th ed. 1999).

⁶⁴ 14 C.F.R. § 415.91 (2002).

⁶⁵ Not even the FAA’s civil penalty regulations require a “clear and convincing” standard. *See* 14 C.F.R. 406.151.

⁶⁶ Eastern and Western Range (EWR) 127-1 Range Safety Requirements (Oct. 31, 1997) (“EWR 127-1”), at 1-21, § 1.6.5.

⁶⁷ *Id.*, at 1-21, § 1.6.5.1.

shall be provided.”⁶⁸ MICs are generally incorporated during the “tailoring” process. Tailoring entails formulating a specific edition of the range requirements for a particular range user.⁶⁹ A change to a range requirement is permitted as part of the tailoring process “as long as the intent of the requirement is met and the equivalent level of safety maintained.”⁷⁰ Nowhere do the range rules call for “clear and convincing” evidence. *Why introduce the requirement now when decades of experience show excellent results without?*

The FAA’s aviation regulations do not require a “clear and convincing” demonstration. In fact, no evidentiary burden is specified in FAA regulations prescribing the need to demonstrate an equivalent level of safety.⁷¹ For example, Section 21.21 of the Federal Aviation Regulations deals with the issuance of type certificates for all types and classes of aircraft⁷² and is similar to the FAA’s licensing requirement for launches.⁷³ It provides that an applicant which cannot meet the airworthiness requirement of the FAA regulations instead may demonstrate an equivalent level of safety.⁷⁴ There is no requirement for a clear and convincing demonstration of “equivalent level of safety.” This approach has been applied effectively for decades in the aviation area, and is reflected throughout the Federal Aviation Regulations. (See examples in Section 4.1.1, above). *Clearly, the FAA, based on decades of experience with aviation, has determined that such an evidentiary standard is uncalled for.*

The FAA has imposed the “clear and convincing” evidence requirement in its launch site licensing rules set forth in 14 C.F.R. Part 420.⁷⁵ However, the FAA did so in 2000 without giving the launch industry an opportunity to comment on the use of this stringent evidentiary burden. The FAA inserted the requirement in the Final Rule without having first proposed it. *Licensing and Safety Requirements for Operation of a Launch Site*, Notice of Proposed Rulemaking, makes no mention of “clear and convincing”

⁶⁸ *Id.*

⁶⁹ *Id.*, at 1-24, § 1A.1.1. The purpose of tailoring “is to ensure that only applicable or alternative Range User requested equivalent requirements are levied upon the program and that the Range Safety requirements are levied in the most efficient manner possible.” *Id.*, at 1-20, § 1.6.3. The tailoring process allows for the deletion of a requirement, when the requirement is not applicable to a Range User Program. *Id.*, at 1-24, § 1A.1.5.1(a).

⁷⁰ EWR 127-1, at 1-24, § 1A.1.5.2(b).

⁷¹ The FAA’s aviation regulations refers to “equivalent level of safety” or “level of safety equivalent to” in the following provisions: 14 C.F.R. § 21.16; 14 C.F.R. § 21.17; 14 C.F.R. § 21.21; 14 C.F.R. § 21.29; 14 C.F.R. § 21.101; 14 C.F.R. § 21.609; 14 C.F.R. § 21.617; 14 C.F.R. § 29.923; 14 C.F.R. § 61.31; 14 C.F.R. Part 121 SFAR No. 58; 14 C.F.R. § 121.310; 14 C.F.R. § 121.335; 14 C.F.R. § 121.337; 14 C.F.R. Part 125 Appendix A; and 14 C.F.R. § 135.178.

⁷² These aircraft include: normal, utility, acrobatic, commuter, and transport category aircraft; manned free balloons; special classes of aircraft; aircraft engines; propellers. 14 C.F.R. § 21.21.

⁷³ *Id.*, Parts 413 and 415.

⁷⁴ See *supra* note 60 (providing text of 14 C.F.R. § 21.21).

⁷⁵ The requirement is imposed in eight instances. See 14 C.F.R. §§ 420.21(c); 420.23(a)(3), (b)(4), (c)(2), (d); 420.25(a); 420.29; and 420.63(c) (imposing the requirement for a “clear and convincing” demonstration).

demonstrations. Not only was industry deprived of the opportunity to express concern with this excessive evidentiary standard, the FAA also failed to comply with the notice and comment requirements in the Administrative Procedure Act.⁷⁶ If an agency's final rule "deviates too sharply from the proposal, affected parties will be deprived of notice and an opportunity to respond to the proposal."⁷⁷ Courts have held that the Administrative Procedure Act requires that "the final rule must be a 'logical outgrowth' of the proposed rule."⁷⁸

4.1.3. The Need for Consistency in the Use of "Equivalent Level of Safety"

The criteria for relief must be clear and consistent. The Department of Transportation's *Policies and Procedures for Simplification, Analysis, and Review of Regulations*, which applies to the FAA, directs that "it is the policy of [DOT] that the following objectives be pursued in the issuance of new regulations: A regulation. . . should be clear, precise and understandable to all who may be affected by it."⁷⁹

- NPRM § 417.107(a)(3) provides that the FAA will approve the use of an alternate flight safety system once the launch operator "demonstrates clearly and convincingly that the proposed launch achieves a level of safety that is equivalent to satisfying all the requirement of [Subparts C and D]." Sea Launch proposes to rewrite the quoted passage as follows: "demonstrates clearly and convincingly that the proposed launch achieves a level of safety that is equivalent an equivalent level of safety to that prescribed [Subparts C and D]."⁸⁰
- NPRM § 417.107(a)(3)(i) provides that the launch operator "must demonstrate that the launch presents significantly less public risk than the [FAA's baseline risk criteria]." Does this mean that it is not sufficient that the safety level be equivalent?

⁷⁶ 5 U.S.C. § 553(b), (c).

⁷⁷ *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 547 (D.C. Cir. 1983).

⁷⁸ *Id.* (citing *Sierra Club v. Costle*, 657 F.2d 298, 352 (D.C. Cir. 1981); *United Steelworkers v. Marshall*, 647 F.2d 1189, 1221 (D.C. Cir. 1980); *accord BASF Wyandotte Corp. v. Costle*, 598 F.2d 637, 642 (1st Cir. 1979), *cert. denied*, 444 U.S. 1096, 100 S. Ct. 1063, 62 L. Ed. 2d 784 (1980); *Taylor Diving & Salvage Co. v. United States Dep't of Labor*, 599 F.2d 622, 626 (5th Cir. 1979)). *See also PPG Indus. v. Costle*, 659 F.2d 1239, 1250 (D.C. Cir. 1981); *Weyerhaeuser Co. v. Costle*, 590 F.2d 1011, 1031 (D.C. Cir. 1978); *South Terminal Corp. v. EPA*, 504 F.2d 646, 659 (1st Cir. 1974) (the first case to use the "logical outgrowth" formula).

⁷⁹ *Policies and Procedures for Simplification, Analysis, and Review of Regulations*, Order, DOT 2100.5 (May 22, 1980), at 4.

⁸⁰ NPRM, at 63981, § 417.107(a)(3).

4.2. The Criteria for Granting a Waiver are Unduly Burdensome

The SNPRM addresses the use of waivers. It defines the term” and suggests that it may be used when a launch operator cannot demonstrate an equivalent level of safety. Yet the criteria the FAA proposes to use in determining whether to grant a waiver suggest that waivers will almost never be granted. The FAA points out that it is authorized under the **CSLA** to grant a waiver if it is “in the public interest and will not jeopardize the public health and safety, safety of property, and national security and foreign policy interests of the United States.”⁸²

However, in the SNPRM, the FAA says that mission objectives, including criteria such as cost and schedule considerations, will not factor in the FAA’s determination of whether to grant a waiver.⁸³ Why will these factors not be considered if the launch can be shown to be safe? They are part of the public interest. These factors are currently considered by the ranges, whose waiver decisions the FAA is proposing to grandfather. Accordingly, the FAA should modify its guidelines for granting a waiver to allow for consideration of cost or schedule provided safety is not jeopardized.

4.3. Launch Operators Should Not Have to Reapply for Relief if Conditions Remain the Same

Applying the FAA’s rationale behind grandfathering,⁸⁴ once the FAA has made a finding of “equivalent level of safety,” a launch operator should not need to make another demonstration as long as the conditions have not changed. Sea Launch proposes that previous showings of “equivalent level of safety” be recognized by the FAA as precedent showings on similar conditions as those proposed for grandfathering. Sea Launch

⁸¹ A waiver means a “decision that allows a launch operator to continue with a launch despite not satisfying a specific safety requirement and where the launch operator is not able to demonstrate an equivalent level of safety.” SNPRM, at 49495, § 417.3. A waiver may apply where “a failure to satisfy the safety requirement involves a statistically or mathematically significant increase in the expected risk as determined through qualitative or quantitative risk analysis, and where the activity may or may not exceed the public risk criteria.” *Id.*

⁸² 49 U.S.C. § 70105(b)(3).

⁸³ The **FAA** states: “Preferably, a launch operator subject to **FAA** regulations would demonstrate an equivalent level of safety to obtain relief. . . .” SNPRM, at 49477. The **FAA** further states that its “focus on the public safety aspects of licensed launches restricts consideration of mission objectives, including cost or schedule considerations, as justification for approval.” *Id.*

⁸⁴ SNPRM § 417.1 proposes grandfathering launch operators using federal ranges on certain conditions. The purpose of grandfathering is to allow an existing noncompliant practice by a launch operator to continue, based on a previous decision to allow the noncompliance. Under the **FAA**’s version of grandfathering, a launch operator launching from a federal launch range would be exempt from specific safety requirements of Part 417 if the launch operator: 1) has been granted a written meets intent certification for its alternative to the safety requirement; or 2) has a written waiver from a federal launch range or a noncompliance that satisfies the federal launch range’s grandfathering criteria. The launch operator also would need to have its **FAA** launch license and applicable meets intent certification, waiver, or noncompliance arrangement as of the effective date of the new regulations.

proposes to add the following new subsection 417.1(c), Equivalent Level of Safety Finding, as follows:

(c) *Equivalent Level of Safety Finding.* If a launch operator has made a demonstration of an equivalent level of safety of any alternate analysis or method of analysis or any alternate flight safety system or subsystem as the basis for obtaining or maintaining a launch operator license, the launch operator shall not be required to perform another demonstration with respect to such analysis, method, or flight safety system or subsystem unless one or more of the following conditions occurs:

- (1) The launch operator makes modifications that affect launch vehicle operations or safety characteristics in a way that invalidates the safety demonstration;
- (2) The launch operator uses the launch vehicle, component, system, or subsystem in a new application in a way that invalidates the safety demonstration; or
- (3) The **FAA** or launch operator determines that a previously unforeseen or newly discovered safety hazard exists that is a source of significant risk to public safety.

4.4. **Provisions for Relief Must be Fair**

Provisions for relief from regulatory requirements must be fair and should not discriminate among and between launch operators, whether they are launching from federal ranges or non-federal ranges. Any exemptions from compliance with Part 417, including grandfathering, should not be allowed to nullify the Part 417 requirements.

Respectfully submitted,



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