DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

Office of Commercial Space Transportation; Finding of No Significant Impact: Launch Operator License for Atlas V Evolved Expendable Launch Vehicles at Vandenberg Air Force Base, California

AGENCY: Federal Aviation Administration (FAA)

ACTIONS: Finding of No Significant Impact

SUMMARY: The FAA Office of Commercial Space Transportation (AST) is issuing this Finding of No Significant Impact (FONSI) for the issuance, renewal, or modification of Launch Operator Licenses for Atlas V launch vehicles covered under the Evolved Expendable Launch Vehicle (EELV) Program from Space Launch Complex-3 East (SLC-3E) at Vandenberg Air Force Base (VAFB), California.

In 1998, the U.S. Air Force (USAF) prepared the *Final Environmental Impact Statement for the EELV Program* (1998 FEIS) in accordance with the National Environmental Policy Act (NEPA) of 1969, 42 United States Code (U.S.C) § 4321-4347 (as amended) and Council on Environmental Quality (CEQ) NEPA implementing regulations (40 Code of Federal Regulations [CFR Parts 1500-1508]) to evaluate the potential environmental impacts of the development, deployment, and operation of EELV systems (later known as the Atlas V and Delta IV launch vehicle families) to replace the Atlas II, Delta II, and Titan IV launch systems at Cape Canaveral Air Force Station, Florida, and SLC-3 West (SLC-3W) at VAFB. In 2000, the USAF prepared the *Supplemental Environmental Impact Statement for the EELV Program* (2000 SEIS) to evaluate the potential environmental impacts of adding up to five solid-propellant strap-on rocket motors to the Atlas V launch vehicle and larger solid-propellant strap-on rocket motors on the Delta IV vehicle. The FAA participated as a cooperating agency in preparation of both the 1998 FEIS and 2000 SEIS because both documents discussed the possibility of both FAA/AST-licensed and non-FAA/AST licensed or government launches of Atlas V and Delta IV vehicles from Cape Canaveral Air Force Station and SLC-3W at VAFB.

Subsequent to preparation of the 1998 FEIS and 2000 SEIS, the USAF determined that SLC-3W would be unavailable as a launch site for the Atlas V program. As a result, in November 2003, the USAF prepared the *Final Environmental Assessment for the Atlas V System from SLC-3E, Vandenberg Air Force Base, California* (hereafter referred to as the 2003 EA) to analyze the environmental impacts of developing, deploying, and operating the Atlas V System from SLC-3E at VAFB. The 2003 EA tiered its analyses from the 1998 FEIS and 2000 SEIS, and therefore both documents were incorporated by reference into the 2003 EA.

Under the Proposed Action in the 2003 EA, the USAF would conduct infrastructure improvements in the vicinity of SLC-3E in order to successfully implement the Atlas V System. These improvements would include modifications to exisiting facilities and equipment within SLC-3E, installation of new facilities and equipment within SLC-3E, widening of a parking lot

and several roads near the launch complex, and replacement of an electrical feeder along a cross-country power line. In addition to these construction activities, the 2003 EA evaluated the potential environmental impacts of up to four Atlas V launches per year from SLC-3E.

In accordance with the requirements of FAA Order 1050.1E, Change 1, paragraph 410, the FAA has independently evaluated the information contained in the 2003 EA and has verified the continued validity of the analysis contained in the EA. The FAA has determined that the discussion of Atlas V launch operations in the 2003 EA (Chapters 2.1.1, 4.1.1.2, 4.1.2.2, 4.1.3.2, 4.1.4.2, 4.2.1.2, 4.3.1.2, and 4.10.1) sufficiently addresses the concerns of the FAA and complies with FAA requirements for implementing NEPA as stated in FAA Order 1050.1E, Change 1. The FAA has determined that there is no new information or analysis that would require preparation of a new or supplemental EA or EIS according to the CEQ Regulations (40 CFR § 1502.9(c)(1)). Therefore, the FAA issues this FONSI concurring with the analysis of impacts and findings in the 2003 EA and formally adopts the launch operations discussion in the EA in compliance with the requirements at 40 CFR § 1506.3 to support the issuance, renewal, or modification of Launch Operator Licenses for Atlas V launch operations from SLC-3E at VAFB. The 2003 EA is incorporated by reference and is summarized as necessary in this FONSI. Much of the analysis in the 1998 FEIS and 2000 SEIS was incorporated into the 2003 EA by reference and because the FAA was a cooperating agency for both of these documents, this information will not be restated here. As a result, this FONSI will only summarize the unique analysis pertaining to Atlas V launch operations presented in the 2003 EA.

FOR MORE INFORMATION CONTACT: Mr. Daniel Czelusniak, Environmental Program Lead, Office of Commercial Space Transportation, Federal Aviation Administration, 800 Independence Ave, SW, Suite 325, Washington, DC 20591, by telephone at (202) 267-5924 or by email at Daniel.Czelusniak@faa.gov.

PURPOSE AND NEED: The purpose of FAA's Proposed Action is to fulfill FAA/AST's responsibilities under the Commercial Space Launch Act, 51 U.S.C. Ch. 509, §§ 50901-23 (2011) and Executive Order (EO) 12465, *Coordination and Encouragement of Commercial Expendable Launch Vehicle Activities*, for oversight of commercial space launch activities, including licensing of launch and reentry activities. The issuance, renewal, or modification of Launch Operator Licenses for Atlas V launch operations from SLC-3E at VAFB is consistent with the agency's responsibilities under Chapter 509 and EO 12465.

The need for action results from the statutory direction from Congress, FAA's regulations, and a Presidential Executive Order, to encourage, facilitate, and promote commercial space launches and reentries by the private sector and facilitate the strengthening and expansion of the U.S. space transportation infrastructure, in accordance with the applicable requirements.[1]

PROPOSED ACTION: Under the FAA's Proposed Action, FAA/AST could issue, renew, or modify a Launch Operator License for Atlas V launch operations from SLC-3E at VAFB. A Launch Operator License would authorize launches of Atlas V vehicles over the 5-year term of the license.

---

[1] The Commercial Space Launch Act, 51 U.S.C. Ch. 509, §§ 50901-23 (2011), the Commercial Space Transportation Competitiveness Act of 2000 (Public Law 106-405); Executive Order 12465, Coordination and Encouragement of Commercial Expendable Launch Vehicle Activities (February 24, 1984); CFR Title 14, Aeronautics and Space, Parts 400-450, Commercial Space Transportation, Federal Aviation Administration, Department of Transportation; the Commercial Space Act of 1998 (Public Law 105-303); the U.S. Space Transportation Policy of 2004; and the National Space Policy of 2010.

Under the Proposed Action in the 2003 EA, the USAF considered the environmental impacts of both the construction activities required to support Atlas V launches from SLC-3E, as well as the impacts of Atlas V launch operations from SLC-3E. As the the FAA's Proposed Action only comprises a subset of the USAF's Proposed Action (i.e., Atlas V launch operations), the FAA has determined that it may appropriately use the USAF's analysis of impacts resulting from Atlas V launch operations in the 2003 EA and this FONSI to support the issuance, renewal, or modification of Launch Operator Licenses for Atlas V launch operations from SLC-3E at VAFB.

The activities associated with FAA's Proposed Action are described in detail in Chapter 2.1.1 of the 2003 EA and are summarized in this FONSI. The 2003 EA evaluated the potential environmental impacts of up to four Atlas V launches per year from SLC-3E at VAFB. The Atlas V System comprises a family of three launch vehicles, the Atlas V 300/400 Series, the Atlas V 500 series, and the Atlas V Heavy. Each variation of the Atlas V uses a common booster core powered by kerosene (rocket propellant 1) and liquid oxygen (LOX). Each configuration also has a cryogenic upper stage, which uses LOX and liquid hydrogen as propellants. Of these configurations, the Atlas V-400 and the Atlas V-500 would be launched from SLC-3E at VAFB under the FAA's Proposed Action. The Atlas V 400 series vehicles have a 4.2-meter (13.8-foot) diameter payload fairing. They are designed to use between zero and four, 1.6-meter (5.1-foot) diameter solid rocket motors (SRMs) that strap on to the common core booster and are powered by solid propellant consisting of ammonium perchlorate, powdered aluminum, and hydroxyl-terminated polybutadiene. The Atlas 500 series vehicles have a 5-meter (16.4-foot) diameter payload fairing and are designed to carry between zero and five strap-on SRMs. Each SRM would include approximately 94,000 pounds of solid propellant. In addition, the Atlas V family of launch vehicles is equipped with a flight termination system which provides range safety personnel the ability to terminate a vehicle undergoing erratic flight in the event of a major malfunction.

ALTERNATIVES CONSIDERED: Alternatives considered by the FAA/AST include the Proposed Action and the No Action Alternative. Under the No Action Alternative, the FAA would not issue, renew, or modify Launch Operator Licenses for Atlas V launch operations from SLC-3E at VAFB. Without a license, there could not be any commercial launches of Atlas V vehicles from SLC-3E at VAFB; however, government launches or other launches of these vehicles that do not require a license could continue from SLC-3E at VAFB.

ENVIRONMENTAL IMPACTS: The following presents a brief summary of the potential environmental impacts considered in the 2003 EA. This FONSI incorporates the USAF's 2003 EA by reference, summarizes those findings where appropriate, and is based on the potential impacts discussed in the EA. In the 2003 EA, the environmental impacts discussion for many resource areas was based on the analyses presented in the 1998 FEIS and 2000 SEIS (which were incorporated into the 2003 EA by reference). Where unique analysis was presented in the 2003 EA, this discussion was focused on the potential environmental impacts resulting from construction activities at SLC-3E. The only resource area discussions related to Atlas V launch operations that are unique in the 2003 EA are the discussion of biological resources and the discussion of cumulative impacts. As a result, only the biological resources and cumulative impact discussions will be summarized in this FONSI.

The FAA has determined the analysis of impacts related to Atlas V launch operations presented in the 2003 EA represent the best available information regarding the potential impacts associated with the FAA's regulatory responsibilities described in this FONSI. In addition, this

FONSI presents any relevant newly available data on existing conditions, potential impacts, and measures to mitigate those impacts.

Biological Resources

No significant impacts to biological resources are expected from Atlas V launch operations from SLC-3E at VAFB. As stated in the 2003 EA, launch activities could result in impacts to native plant communities in the vicinity of SLC-3E through localized, foliar scorching and spotting of vegetation due to high temperatures and fire, and defoliation of vegetation due to acid deposition from exhaust emissions of hydrogen chloride. However, as these impacts would be temporary due to the infrequent number of launches (up to four per year) and the observed recovery of vegetation between launches, the 2003 EA concluded that these impacts would not affect the long-term composition of the vegetation community.

Sensitive plant communities such as Coast Maritime Chaparral and Beach layia are present in the vicinity of SLC-3E and could be affected by fire resulting from launch activities. However, brush management practices and standard fire prevention and response procedures are in place at VAFB to reduce the risk of such an event.

Noise and vibration produced by launch operations, as well as the visual impact of rocket flight paths, could disturb or startle wildlife and migratory birds in the vicinity of SLC-3E. This could result in a temporary interruption of foraging and nesting activities in the immediate area of the launch pads. As stated in the 2003 EA, these effects would be short-term and would not be considered significant. Loss of habitat could result from fire in areas adjacent to the launch duct; however, brush management practices are in place at VAFB to minimize the risk of such an event.

The 2003 EA noted that a variety of special status wildlife species listed under the Federal Endangered Species Act may be present in the vicinity of SLC-3E. These species include the unarmored threespine stickleback, tidewater goby, California red-legged frog, California brown pelican, western snowy plover, California least tern, southwestern willow flycatcher, least Bell's vireo, southern sea otter, pacific harbor seal, California sea lion, northern elephant seal, northern fur seal, and the Steller sea lion. As discussed above, these species could be adversely affected by exhaust and noise emissions resulting from ground-level rocket launches. In 1999, as a result of the potential impacts to these species from prior Atlas IIAS launch activities at SLC-3E, the USAF initiated Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS). In December of 1999, the USFWS issued a Biological Opinion stating that the Atlas IIAS program would not adversely affect federally listed species or critical habitat, and outlining monitoring requirements to assess the level of noise impacts to listed bird species. In September of 2003, the USAF requested concurrence from the USFWS that the Atlas V program would also not affect federally listed species or critical habitat. The USFWS issued their concurrence with this determination in October of 2003, stating that the Atlas V program would not adversely affect federally listed species or critical habitat in a manner or to an extent not already considered in the 1999 Biological Opinion. As a result of this concurrence, Atlas V launch operations are not expected to result in impacts to listed species in the vicinity of SLC-3E.

In addition, the 2003 EA states that launches from VAFB require an incidental take permit from the National Marine Fisheries Service (NMFS) to address the harassment of marine mammals under the Marine Mammal Protection Act. As of 2003, VAFB held a 5-year programmatic incidental take permit consolidating different launch programs that allowed for the incidental

harassment of marine mammals (including pacific harbor seals, California sea lions, northern elephant seals, and northern fur seals) to occur during associated launches. This agreement between the USAF and NMFS was renewed most recently on February 7, 2011, and permits up to 20 annual rocket launches of ten different rocket types from VAFB, including launches of the Atlas V vehicle at SLC-3E.

Cumulative Impacts

Atlas V launch operations would not result in significant cumulative impacts to any resource. The 2003 EA analyzed the environmental impacts of all past, present, and reasonably foreseeable future activities at VAFB in 2003. As stated in the 2003 EA, other activities planned in the vicinity of SLC-3E include flights of SpaceX's Falcon launch vehicle at SLC-3W. However, because the Falcon vehicle is smaller than the Atlas V vehicle, and the combined launch rates for the Falcon and Atlas launch programs would be small (a maximum of seven launches per year), the 2003 EA concluded that the combined environmental impacts of the two launch programs would not be significant. There has been no substantial change in launch projections at VAFB since the publication of the 2003 EA; as a result, the Proposed Action would not be expected to have a significant cumulative impact.

DETERMINATION: The 2003 EA examined the potential for significant environmental impacts related to Atlas V launch operations from SLC-3E at VAFB. The 2003 EA determined that exhaust emissions and noise produced during rocket launches could have adverse impacts on biological resources in the vicinity of SLC-3E. However, because launches would be infrequent, emissions quantities would be inappreciable, and noise and air emissions would be temporary and likely to disperse quickly, Atlas V launch operations would not result in significant impacts to the environment.

The FAA independently evaluated the information contained in the 2003 EA and verified the continued validity of the analysis contained in the document. Through the evaluation, the FAA determined that there is no new information or analysis that would require preparation of a new or supplemental EA or Environmental Impact Statement according to the CEQ Regulations (40 CFR § 1502.9 (c)(1)). The FAA is therefore adopting the launch operations discussion in the 2003 EA, and is using this document to support its finding on the Proposed Action.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101 of NEPA and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(c) of NEPA.

Issued in Washington, DC on: 8/12/11

Dr. George C. Nield

Associate Administrator for

Commercial Space Transportation