

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Environmental Assessment (EA) for the United Launch Alliance Vulcan Centaur Program Space Launch Complex (SLC) 41 Cape Canaveral Air Force Station (CCAFS), FL

Introduction

Pursuant to the Council on Environmental Quality (CEQ) regulations, the provisions of the National Environmental Policy Act (NEPA) of 1969, 40 Code of Federal Regulations (CFR) Parts 1500-1508, and Environmental Impact Analysis Process (32 CFR Part 989), the U.S. Air Force (USAF) adopts the EA prepared by United Launch Alliance, LLC (ULA) to address the potential environmental consequences associated with the Vulcan Centaur Space Launch Program proposed action at SLC-41 on Kennedy Space Center (KSC) (leased to the USAF at CCAFS), Florida. That EA is attached and incorporated by reference. The EA analyzed impacts associated with modifications at SLC-41, the Vertical Integration Facility (VIF) (Facility 29410) and the Solid Motor Assembly and Readiness Facility (SMARF) (Facility 69800). The USAF has determined that the EA is current, satisfactorily meets 32 CFR Part 989 requirements, and adequately addresses impacts associated with conducting construction and operations of the Vulcan Centaur Space Launch Program.

In accordance with 32 CFR Part 989.9, the USAF released the draft EA for public review along with a draft FONSI for actions affecting USAF leased and owned property. These documents were made available to the affected public for a 30-day review/comment period commencing on _____ 2019. The affected public was notified by advertisements placed in a locally viewed newspaper. Persons who commented during scoping and tenant organizations were contacted directly about the availability of the draft EA/FONSI. The documents were made available by placing them in two local public libraries, the 45th Space Wing (45 SW) Public Affairs Office, and the Patrick Air Force Base internet site. ____ public comments were received. The draft EA was also coordinated Federal and State agencies. Coordination with Federal and State agencies along with their responses is documented in the Appendix B, C and D of the EA.

Proposed Actions Occurring on USAF Leased and Owned Property

The Proposed Action would allow implementation of the Vulcan Centaur Program at CCAFS. Once Vulcan Centaur is fully operational, ULA eventually intends to phase out its Atlas V and Delta IV Programs.

The Vulcan Centaur Launch Vehicle will contain a larger diameter booster tank than the Atlas V. The first stage will use new BE-4 booster engines that consume liquid oxygen (LO2) and liquefied natural gas (LNG). Multiple Solid Rocket Motor (SRM) configuration options (zero, two, four or six Orbital ATK GEM-63XL motors) can be specified depending on payload and performance requirements. The Vulcan first stage will integrate with the Centaur V upper stage, which is similar to but larger than the current Centaur III stage flying on Atlas V rockets.

Vulcan vehicle components, manufactured at ULA's Facility in Decatur, AL, and shipped aboard the Delta Mariner cargo ship, will be received at the CCAFS Wharf. Components are transferred via truck over CCAFS roads to the Atlas Spaceflight Operations Center (ASOC), Facility 75251, in the CCAFS Integrate-Transfer-Launch (ITL) area. Transportation of Vulcan vehicle

components is within the scope of the EA. The transportation routes used for Vulcan vehicle components are identical to the current Atlas V routes from the wharf.

No vehicle components will be reused; the Vulcan Program vehicles are completely expendable. ULA projects 20 launches per year by 2027. Vulcan Centaur Program payloads will be similar to current and planned payloads launched on Atlas V. Launch vehicle trajectories will be specific to each particular mission and are similar to Atlas V trajectories.

Vulcan Centaur Program modifications will occur at SLC-41, the VIF (Facility 29410) and the SMARF (Facility 69800). These modifications include:

- Constructing a new Mobile Launcher Platform (MLP) in the SMARF, Facility 69800 (complete in 2019). The MLP will be stored in the SMARF between launches.
- Upgrading the existing 60-ton crane in the VIF, Facility 29410, to 65-ton capacity. New VIF mechanical work platforms will be designed, fabricated and installed to support Vulcan Centaur Vehicle preparations.
- Modifying launch facilities at SLC-41:
 1. Installing a new LNG system with three new 100,000-gallon storage vessels, six vaporizers, one knock-down vessel, one liquid nitrogen (LN2) vessel, three flare stacks, three offload stations and cross-country piping to support the Vulcan first stage.
 2. Replacing the existing 36,000-gallon Duct Exit (DEX) ASWS vessel with a 50,000-gallon ASWS vessel and installing two new 20,000-gallon water tanks and one new 600 cubic foot GN2 accumulator for the lower ASWS spray manifold to accommodate a larger Vulcan vehicle burn time.
 3. Replacing the existing 42,000-gallon LH2 vessel with one 122,000-gallon LH2 vessel and associated piping, three new fill stations and replacing the existing LH2 vehicle and tank flare stacks to support the new Centaur upper stage.
 4. Installing one new 65,000 gallon LO2 vessel and associated piping, three new fill stations, and four new vaporizers to support the new Vulcan Centaur upper stage. The existing 28,000 gallon LO2 vessel that currently supports Atlas V Centaur will be deactivated. The existing 465,000 gallon LO2 vessel that currently supports Atlas V booster will be utilized to support Vulcan booster with only minor piping changes required.

Vulcan Centaur ground support operations and vehicle processing flow will be nearly identical to current Atlas V operations. Vulcan Centaur component receipt, inspection and horizontal testing will be completed in the ASOC and then the components will be transferred to the VIF for vertical assembly of the launch vehicle, payload and SRMs. Launch vehicle subsystem checks and system verifications, final installations and vehicle closeouts will be conducted in the VIF. The Payload Van provides utility interfaces to the payload at the VIF for prelaunch testing, during transit to the pad and then at the pad during launch. The Vulcan Centaur vehicle is transported on the MLP from the VIF to SLC-41 where the first stage booster LNG and LO2 transfers and checkouts and Centaur upper stage LH2 and LO2 transfers and checkouts are completed to support Wet Dress Rehearsal (WDR) and terminal launch countdown sequences.

Environmental Consequences

The EA addressed impacts associated with the Proposed Action and the No Action Alternative. Other alternatives were considered but not carried forward for analysis. A comprehensive

examination of available and in-development booster engines was conducted and potential launch site locations at CCAFS and inside and outside the continental U.S. were evaluated. None of these alternatives met the purpose, need and assessment criteria, and none were evaluated further.

Section 4 of the EA documents the 16 environmental aspects are identified and analyzed: Land Use / Visual Resources, Noise, Biological Resources, Historical and Cultural Resources, Air Quality, Climate, Orbital and De-Orbiting Debris, Hazardous Materials and Solid and Hazardous Waste, Water Resources, Geology and Soils, Transportation, Utilities, Health and Safety, Socioeconomics, Environmental Justice and Department of Transportation Act Section 4(f) Properties. No significant impacts on these resources were identified from construction, launch operations or launch. Cumulative impacts on the resource areas are documented in Section 5 of the EA. Cumulative impacts were determined to be negligible with less than significant effects to resources.

To comply with the requirements of the Endangered Species Act and the Marine Mammal Protection Act and avoid significant adverse impacts to species, ULA would be required to continue to adhere to all requirements of the past, current and ongoing consultations with the United States Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS). With these measures, the Proposed Action would not be expected to have a significant impact on biological resources. The USAF submitted a memorandum for an Informal Section 7 Consultation for United Launch Alliance Vulcan Centaur Operations and Launch Program, Cape Canaveral Air Force Station, Florida. The memorandum determined that the Proposed Action may effect, but is not likely to adversely effect, federally listed species occurring in the area that could be impacted by launch operations. USFWS concurred in April 2019.

The 45 SW Cultural Resources Manager evaluated the areas affected by the Proposed Action and no historical or cultural resource issues were found. The Florida Department of State Division of Historic Resources and State Historic Preservation Officer performed a Sections 106 and 110 National Historic Preservation Act of 1966 review of the Proposed Action. Their conclusion that the Proposed Action will have no effect on historic properties is contained in Appendix D of the EA. The Florida Clearinghouse evaluated the EA for Coastal Zone Management issues and concluded no significant impacts would occur to the subject resource area.

The proposed action has no impact on wetlands. St. Johns River Water Management District (SJRWMD) Stormwater Environmental Resource Permit (ERP) 16843-19, LC-41 Infrastructure Upgrades, was issued for this Proposed Action by SJRWMD on December 18, 2018.

Finding of No Practicable Alternative

Executive Order (EO) 11988, *Floodplain Management*, dated May 24, 1977, requires Federal agencies to evaluate the potential effects of actions it may take in a floodplain to avoid adversely impacting floodplains; wherever possible, to ensure that its planning programs and budget requests reflect consideration of flood hazards and floodplain management, including the restoration and preservation of such lands areas as natural undeveloped floodplains; and to prescribe procedures to implement the policies and procedures of this EO. The Proposed Action is not located within the 100-year floodplain. No construction is proposed within the 100-year floodplain

Finding of No Significant Impact

In accordance with the CEQ Regulations implementing NEPA (Public law 91-190, 42 U.S.C. §§4321-4347), as amended, and 32 CFR 989, 15 Jul 1999, and amended 28 Mar 2001, an assessment of the identified environmental effects has been prepared for the Vulcan Program Proposed Action on CCAFS and CCAFS leased property. I find that the action will have no significant impact on the quality of the human or natural environment; thus, an EIS is not warranted. This decision has been made after taking into account all submitted information and considering a full range of practicable alternatives that will meet project requirements and that are within the legal authority of the USAF.

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Chief, Civil Engineer Division
Command Civil Engineer

Date