

FINDING OF NO SIGNIFICANT IMPACT (FONSI) (Draft)
Environmental Assessment (EA) for the Relativity Terran 1 Program
Launch Complex (LC) 16
Cape Canaveral Air Force Station (CCAFS), FL

Introduction

This Finding of No Significant Impact (FONSI) was prepared per the National Environmental Policy Act (NEPA), 42 U.S. Code 4321 et seq., implementing Council on Environmental Quality (CEQ) Regulations, 40 Code of Federal Regulations (CFR) 1500-1508, and 32 CFR Part 989, Environmental Impact Analysis Process. This FONSI hereby incorporates by reference and attaches hereto the Environmental Assessment (EA) for the Relativity Space Inc. (Relativity) Terran 1 Program at Launch Complex 16 (LC-16) at Cape Canaveral Air Force Station (CCAFS), Florida. The EA analyzed impacts associated with up to 12 Terran 1 launches per year and modifications to LC-16 to support those launches. The United State Air Force (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 Relativity's Terran 1 Space Launch Program.

In accordance with 32 CFR 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 30 April 2020. The affected public was notified by an advertisement placed in a locally viewed newspaper. The documents were made available by placing them in the 45th Space Wing (45 SW) Public Affairs Office, the Patrick Air Force Base internet site and Relativity internet site. [Public comment discussion]. The draft EA was also coordinated with Federal and State agencies. Coordination with Federal and State agencies along with their responses is documented in the Appendices C, D, E, and F of the EA.

Proposed Actions Occurring on USAF Leased and Owned Property

The Proposed Action would allow implementation of the Relativity's Terran 1 Program at CCAFS.

The Terran 1 Launch Vehicle first stage is 66 feet tall, 7.5 feet in diameter and powered by nine (9) Aeon 1 engines that consume liquid oxygen (LOX) and liquid natural gas (LNG). The 9 feet tall, 7.5 feet diameter interstage connects the first stage to the second stage. The 13.5 feet tall, 7.5 feet diameter second stage is powered by one Aeon vacuum (VAC) re-startable engine. The 22 feet tall, 10 feet diameter fairing encapsulates the payload.

The majority of the Terran 1 components are 3D printed using proprietary materials in Relativity's Stargate factory located in Los Angeles County, CA. The nine Stage 1 Aeon 1 engines each produce 23,000 pounds of sea level thrust, for a total of 207,000 pounds of lift-off thrust.

Transportation of Terran 1 vehicle components is within the scope of the EA. Terran 1 vehicle stages will arrive at CCAFS loaded on standard over-the road tractor-trailers and will travel from the south CCAFS gate near the port along Phillips Parkway to Heavy Launch Road to ICBM Road and finally to LC-16.

No vehicle components will be reused; Terran 1 Program vehicles are completely expendable. Relativity projects 12 launches per year from LC-16. Terran 1's payload delivery capability is 1,250 kilograms (kg) maximum payload to 185 kilometers (km) Low Earth Orbit (LEO), 900 kg nominal payload to 500 km Sun Synchronous Orbit (SSO) and 700 kg High Altitude Payload to 1,200 km SSO.

The Proposed Action to support Terran 1 Program operations requires modifications to existing facilities and construction of new systems and facilities at LC-16:

- A new paved parking and security staging area and Badge Exchange shelter will be located on the north side of the entrance road. Existing Facility 13125 will be used for Shipping and Receiving, a Security Office, and general office space. LC-16 will have a new security fence with a new security gate at the existing entrance road.
- The existing concrete Launch Pad, ramp to the Launch Pad and flume will be refurbished. A new pad lightning protection system, Environmental Control System (ECS) Facility and Pad Support Building will be constructed.
- A new LOX Storage Farm and tanker station, LOX dump basin, LNG Storage Farm and tanker station, LNG vaporizer, LNG flare and LNG impoundment basin will be constructed.
- A High Pressure Gas Storage Area with both gaseous and liquid nitrogen capabilities will be constructed.
- A new Integration Hangar and Payload Processing Facility will be constructed for use in integrating Terran 1 vehicle components prior to rollout to the pad for testing and launch and processing, encapsulating and mating payloads to the launch vehicle.
- The existing Blockhouse, Facility 13122, will be refurbished for instrument bays, local pad controls and office space.
- New water storage tanks and a pump house will provide deluge, sound suppression and fire suppression water.

Terran 1 launch operations begin with delivery of vehicle components to the LC-16 Integration Hangar. There the launch vehicle will undergo checkouts and the two stages will be integrated together. The launch vehicle will then be integrated into the Transporter-Erector (TE). The integrated Stage 1 (S1), Stage 2 (S2) and TE will roll out from the Integration Hangar to the pad, where the launch vehicle will be erected to the vertical position. Static fire testing will be performed to provide a thorough test of all systems. The vehicle will then be lowered to the horizontal position and rolled back into the Integration Hangar. The encapsulated payload will be mated to the vehicle. The integrated payload and launch vehicle will roll out to the pad and be erected to the vertical orientation and prepared for launch.

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 potential launch site locations at CCAFS and inside the continental U.S. was undertaken. None of these alternatives met the purpose, need and assessment criteria, and none were evaluated further.

Section 4 of the EA analyzes the following resource areas: 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, Relativity 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.

Since construction at LC-16 may affect Federally-listed species and/or their habitat, the USAF was required to consult with the USFWS under Section 7 of the Endangered Species Act (ESA) of 1973. Relativity completed a Biological Assessment (BA) for the USAF to meet this requirement. This BA assessed construction and operational activities and the potential impacts to federally listed species. The USAF determined that the proposed project may affect, but is not likely to adversely affect, the Florida Scrub-Jay, Eastern Indigo Snake, West Indian Manatee, Wood Stork, Piping Plover and Red Knot. The USFWS concurred with these determinations. Relativity will be required to ensure their processing facility is able to accommodate smoke from prescribed burns to ensure the 45 SW can continue long-term management of scrub-jay habitat to meet species recovery goals.

The USAF also determined that the Proposed Action may affect, and is likely to adversely affect the Southeastern Beach Mouse and nesting marine turtles: Leatherback, Loggerhead, Green, Kemps Ridley and Hawksbill. The USFWS concurred with these determinations. Impacts to nesting marine turtles has been assessed in a previous Programmatic Biological Opinion (PBO) and Relativity will be required to adhere to the terms and conditions of that PBO. A Light Management Plan will be submitted to the USAF and USFWS for approval. Adverse impacts to the Southeastern Beach Mouse will be reduced through habitat enhancement north of LC-16. The USAF and USFWS will collaborate to complete monitoring of this restoration. Based on the information provided in the BA and subsequent Biological Opinion (BO), the USFWS determined that the Proposed Action is not likely to jeopardize the continued existence of any Federally-listed species. The BO is contained in Appendix D of the EA.

The 45 SW Cultural Resources Manager evaluated the area affected by the Proposed Action. 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 file review indicated that Facility 13122 LC-16 Blockhouse (8BR2322) appeared to meet the criteria for listing on the National Register. However, based on the information provided, the office concurs with the Cultural Resources Manager's determination that the proposed undertaking will have no adverse effect on the historic character of the blockhouse. This documentation is contained in Appendix E of the EA. [Clearinghouse review input].

Terran 1 Program modifications to LC-16 are not expected to disturb wetlands. All wetlands are outside of the area of construction.

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 Relativity's Terran 1 Program Proposed Action on CCAFS property. I find that the action will have no significant impact on the environment; thus, an Environmental Impact Statement 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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Date