Final
U.S. Space Force – Space Systems Command Flight Tests
Environmental Assessment / Overseas Environmental Assessment

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14 September 2022

Volume II – Appendices

U.S. Space Force – Space Systems Command
Launch Enterprise, Small Launch & Targets Division
Kirtland Air Force Base, New Mexico

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Appendix A

Consultation under Endangered Species Act Section 7 and Environmental Standards and Procedures for United States Army Kwajalein Atoll Activities in the Republic of the Marshall Islands Section 3-4.5

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DEPARTMENT OF THE ARMY
U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND/
POST OFFICE BOX 1500
HUNTSVILLE, ALABAMA 35807-3801

REPLY TO
ATTENTION OF

February 18, 2022

Steve Kolinski, PhD
National Marine Fisheries Service
Pacific Islands Regional Office
1845 Wasp Boulevard, Building 176
Honolulu, HI 96818

Dear Dr. Kolinski,

The United States Space Force (USSF) Space Systems Command (SSC) with the assistance of the U.S. Army Space and Missile Defense Command (USASMDC), is evaluating the effects of the proposed USSF SSC Flight Tests (Proposed Action) on protected biological resources. The purpose of the USSF SSC flight tests is to successfully design, fabricate, integrate, test, and launch up to two flight test demonstrations in support of the USSF SSC mission. The Proposed Action would involve up to two flight tests launching from Wake Island, vehicle flight over the Pacific Ocean, booster splashdown in a broad ocean area of the Pacific Ocean, and flight termination in a deep-water Ronald Reagan Ballistic Missile Defense Test Site testing range at Kwajalein Atoll, Republic of the Marshall Islands.

The USSF SSC and USASMDC have prepared a Biological Assessment to evaluate the effects of the Proposed Action on species listed under the Endangered Species Act (ESA) and as consultation species under Section 3-4 of the U.S. Army Kwajalein Atoll Environmental Standards (UES). As described in the enclosed Marine Biological Assessment for USSF SSC Flight Tests, a number of ESA and UES protected species occur or have the potential to occur in the Action Area and the USSF has evaluated the effects of the Proposed Action on these species and their habitats.

Based on analyses of all of the potential stressors resulting from the Proposed Action, the USSF SSC and USASMDC have determined that the Proposed Action would have no effect on three listed coral species (*Acropora globiceps*, *Acropora retusa*, and *Acropora speciosa*) offshore of Wake Island.

The USSF SSC and USASMDC have also determined that the Proposed Action may affect but is not likely to adversely affect 18 marine mammal species, 5 sea turtle species, and 5 fish species. The species not likely to be adversely affected are the sei whale, blue whale, fin whale, short-beaked common dolphin, pygmy killer whale, short-finned pilot whale, Risso's dolphin, pygmy sperm whale, the Western North Pacific Distinct Population Segment (DPS) of humpback

whales, Blainsville's beaked whale, killer whale, melon-headed whale, sperm whale, pantropical spotted dolphin, striped dolphin, spinner dolphin, bottlenose dolphin, Hawaiian monk seal, the North Pacific Ocean DPS of loggerhead turtles, the Central West Pacific DPS of green turtles, leatherback turtle, hawksbill turtle, olive ridley turtle, bigeye thresher shark, oceanic whitetip shark, giant manta ray, the Indo-West Pacific DPS of scalloped hammerhead sharks, and the Pacific bluefin tuna.

Our supporting analysis is provided in the enclosed Biological Assessment. We request initiation of informal consultation under Section 7 of the ESA and Section 3-4 of the UES and request your written concurrence if you agree with our determinations.

I am also providing copies of this letter and the biological assessment to Moriana Phillip, Republic of the Marshall Islands Environmental Protection Authority – Majuro; Kanalei Shun, U.S. Army Corps of Engineers; John McCarroll, U.S. Environmental Protection Agency; and Dr. Dan Polhemus, Pacific Islands Fish and Wildlife Office.

Please contact David Fuller, USASMDC Environmental Division, regarding this consultation request at 256-425-2016 or david.g.fuller6.civ@army.mil.

Sincerely,

HILL.WELDON.H.JR.1216862682 Digitally signed by HILL.WELDON.H.JR.1216862682
Date: 2022.02.18 08:36:25 -06'00'

Weldon H. Hill, Jr.
Deputy Chief of Staff for Engineering
U.S. Army Space and Missile Defense Command

Enclosure:
Biological Assessment

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1845 Wasp Blvd., Bldg 176
Honolulu, Hawaii 96818
(808) 725-5000 • Fax: (808) 725-5215

June 13, 2022

Weldon Hill
Deputy Chief of Staff for Engineering
US Army Space and Missile Defense Command
PO Box 1500
Huntsville, AL 35807-3801

RE: Request for Informal Consultation for Proposed U.S. Space Force Flight Tests from Wake Island, U.S., to Gagan Islet, Kwajalein, in the Republic of Marshall Islands (I-PI-22-2008-MT; PIRO-2022-00613)

Dear Mr. Hill:

On February 18, 2022, NOAA's National Marine Fisheries Service (NMFS) received your written request to initiate informal consultation on up to two missile flight tests that will launch from Wake Island, fly over the broad ocean area (BOA) with booster splashdown in the BOA of the Pacific Ocean, then terminate in the deep ocean waters near Gagan Islet at Kwajalein Atoll, Republic of the Marshall Islands (RMI). The U.S. Space Force Systems Command and the U.S. Army Space and Missile Defense Command jointly developed the biological assessment for the Department of the Air Force (DAF), which is the action agency. The DAF concluded that its proposed action is not likely to adversely affect (NLAA) the species listed in Table 1, which are protected under the standards and procedures described in the Environmental Standards and Procedures for United States Army Kwajalein Atoll (USAKA) activities in the RMI (USAKA Environmental Standards [UES]) and by the United States Endangered Species Act (ESA).

We requested additional information on March 17, 2022, about vessel size and if any additional vessels will be used. We also inquired about approval of updated best management practices (BMPs) on March 17, 2022. DAF replied on March 21, 2022, with information regarding the vessel *Pacific Collector* and April 15, 2022, agreeing to the BMPs. On May 11, 2022, the DAF provided additional information for other expected vessel operations. On May 18, 2022, we requested additional information clarifying the species list at the Kwajalein terminal location. Clarification was provided by DAF on May 19, 2022. In response we requested additional information on the same date to determine how metrics were modelled for potential impact exposures at the terminal location. Applicable responses were provided by the DAF on May 23, 2022, and we initiated informal consultation on that date.

This letter underwent pre-dissemination review using standards for utility, integrity, and objectivity in compliance with applicable guidelines issued under the Data Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001, Public Law 106-554). A complete record of this consultation is on file at the Pacific Island Regional Office, Honolulu, Hawaii.

USAKA Environmental Standards

The RMI has agreed to allow the U.S. Government to use certain areas within the RMI, including eleven islets at Kwajalein Atoll that are administered by USAKA. The relationship between the U.S. and RMI Governments is governed by the Compact of Free Association (Compact), as Amended in 2003 (48 U.S.C. 1921). The Compact obligates the U.S. to apply the National Environmental Policy Act of 1969 (NEPA) to its actions in the RMI as if the RMI were a part of the U.S. The ESA does not apply at USAKA. Instead, the Compact specifically requires the U.S. Government to develop and apply environmental standards that are substantially similar to several U.S. environmental laws, including the ESA and the Marine Mammal Protection Act (MMPA). The standards and procedures described in the UES were developed to satisfy that requirement. As such, the U.S. Government must apply the UES to its activities at USAKA and for all USAKA activities in the RMI.

Proposed Action

The DAF proposes to design, fabricate, integrate, test and launch two flight test demonstrations over the course of two years in support of the U.S. Space Force Systems Command Space Systems Command mission. This proposed action will involve two missile test flights from the launch facility located on Wake Island across the BOA to deep ocean waters near Gagan Islet in Kwajalein Atoll. Both missiles will fly over the BOA, where the boosters will splashdown, before the front end terminates at the deep ocean waters east of Gagan Islet in Kwajalein Atoll, RMI (Figure 1). Each of these planned test flight launch and pre-launch activities will be separated by one year.

Vessel operations in the BOA and test range will consist only of vessel traffic for sensor coverage, equipment transport, or other limited test activities. The vessels used will be those typically used at USAKA and will likely transit from Kwajalein Islet to the test range as for normal test site operations.

Launch site preparations and operations. These include routing activities to prepare for flight testing, such as transport of vehicle components to Wake Island via aircraft. Motor processing will be conducted in an existing missile assembly building and final integration of the launch vehicle will occur on an existing launch pad. No major site preparation is required, nor is any new construction or vegetation clearing. This part of the operation is not analyzed in this consultation.

BOA operations. The BOA is the deep ocean waters between Wake Island and Kwajalein Atoll outside the U.S. exclusive economic zone. Activities include the vehicle overflight, booster splashdown, and support vehicle operations. Up to four weeks of activities are required in the BOA for both flight tests combined.

Kwajalein Atoll operations. The areas considered in this proposed action are the deep ocean waters to the east of Gagan Islet in the RMI. Proposed activities include human activity and equipment operation on Gagan Islet in previously established and frequently used areas. No vegetation clearing, construction, or heavy equipment is required and thus activities on Gagan Islet will not be considered further in this consultation.

Human activity, vessel operation, and splashdown of the front end will occur in the deep ocean waters between 600 m to 4,000 m (2,000 to 13,000 feet (ft.)) deep, far offshore. The vessel *Pacific Collector* will serve as a mobile instrumentation platform, providing logistical and instrumentation support.

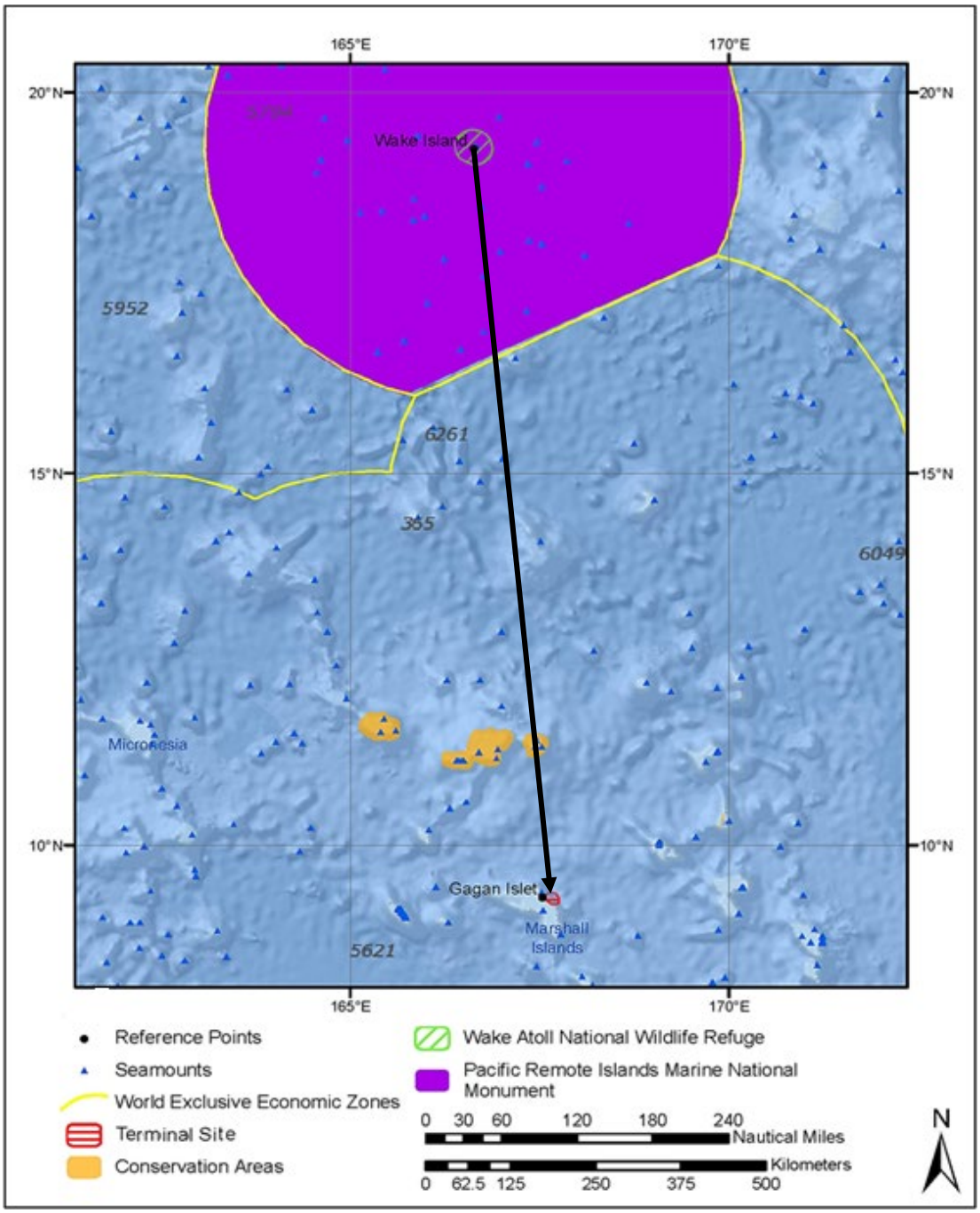

Figure 1. Proposed missile flight path from Wake Island across the BOA to Gagan Islet in the Kwajalein Atoll

Best Management Practices

The following USAKA BMPs shall be implemented for all components of the proposed project:

1) Transportation/installation operations will cease during adverse meteorological conditions or sea state.
2) Vessel operations will not involve any intentional ocean discharges of fuel, toxic wastes, or plastics and other solid wastes that could potentially harm marine life.

a. Operators will inspect equipment daily, prior to use, for leaks, structural integrity, and potential pollutants prior to the start of transportation/installation activities. Operators will clean all equipment of any petroleum-based product or other potential polluting material that could be released into the marine environment.
b. Operators will maintain a spill kit onsite and will respond to any spills immediately to prevent discharge to the lagoon or other water sources and will report any spills in accordance with the Kwajalein Environmental Emergency Plan.
c. The Action Proponents will conduct a post-test evaluation of the terminal test location to ensure that all debris sank to the ocean floor. In the event that test debris is found on the ocean surface or is otherwise visible under the surface, debris will be cleaned up to minimize the possibility of entanglement or ingestion by marine wildlife.

3) When piloting vessels, vessel operators shall alter course to move at least 50 m (164 ft) from marine mammals, UES-listed fish, and sea turtles, and maintain this distance. Boat operators and survey crew leaders will maintain a proper lookout for marine mammals and other sea-life.
    a. If operators or staff observe marine mammals, turtles, or UES-listed fish within 50 m of the vessel, the vessel operator shall reduce the speed to 10 knots or less until the species are beyond 50 meters.
    b. If operators or staff observe sea turtles within 50 m of the vessel, the vessel operator shall reduce the speed, if practicable, to 5 knots or less.
    c. If, despite efforts to maintain the distances and speeds described above, a marine mammal, UES-listed fish, or turtle approaches the vessel, operators will put the engine in neutral until the animal is at least 12 m (40 ft) away, and then slowly move away to the prescribed distance. Operation will not resume until the protected species has departed the immediate area of its own volition. If maintaining 12 m (40 ft) is not possible due to high sea turtle density, reduce vessel speeds to 5 knots.
    d. Marine vessels (during movement) shall maintain speed and a straight course (i.e., no swerving) in the event spinner dolphins or other dolphins ride along the wake of the bow.
    e. Marine mammals, sea turtles and other ESA-listed and UES-listed motile species shall not be encircled or trapped between multiple vessels or between vessels and the shore.

4) Operators will make every effort to anchor the vessels in sandy bottom areas or substrates free of UES consultation species. Where possible divers will assist in placing and securing the anchor. In the event this should not be possible, no anchoring will take place at that location and divers will have to operate out of a floating/drifting vessel or the vessel will have to be relocated to a compliant anchoring area.

5) No staff will attempt to feed, touch, ride, or otherwise intentionally interact with any ESA-listed or UES-listed marine species.

Action Area

Under the ESA, the action area is defined by regulation as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50

CFR §402.02). The action area for the proposed activities encompasses the full extent of the action's modifications to land, water, and air. For this action, the full extent of direct and indirect effects is:

- The BOA associated with the missile paths
- The deep ocean waters East of Gagan Islet where the front end will splashdown and in which the *Pacific Collector* and support vessels will search for and collect any debris
- All vessel transit paths

Listed Species in the Action Area

The Compact requires UES consultation for species that have been listed or are proposed or candidates for listing as endangered or threatened under the ESA, all marine mammals, and certain species and critical habitats protected under RMI statutes. The USAKA determined that the ESA and UES-consultation species listed in Table 1 are known to occur or could reasonably be expected to occur along the flight test routes and may be present in the action area. There is no critical habitat designated in the action area.

Table 1. ESA and UES-consultation species considered in this consultation.

Common Name	***Scientific Name***	**ESA, MMPA, or RMI Status**
Marine Mammals		
Bottlenose Dolphin	*Tursiops sp.*	MMPA - Resident
Common Dolphin	*Delphinus delphis*	RMI
Risso's Dolphin	*Grampus griseus*	MMPA - Resident
Spotted Dolphin, Pantropical	*Stenella attenuata*	RMI
Striped Dolphin	*Stenella coeruleoalba*	RMI
Spinner Dolphin	*Stenella longirostris*	MMPA - Resident
Blainville's Beaked Whale	*Mesoplodon densirostris*	MMPA - Migratory
Blue Whale	*Baelaenoptera musculus*	ESA - Endangered; MMPA - Migratory; RMI
Fin Whale	*Baelaenoptera physalus*	ESA - Endangered; MMPA - Migratory
Sei Whale	*Balaenoptera borealis*	ESA – Endangered
Western North Pacific Humpback Whale	*Megaptera novaeangliae*	ESA - Endangered; MMPA - Migratory
Killer Whale	*Orcinus orca*	MMPA - Resident
Melon-Headed Whale	*Peponocephala electra*	MMPA - Resident
Pygmy Killer Whale	*Feresa attenuata*	MMPA - Resident
Pygmy Sperm Whale	*Kogia breviceps*	MMPA - Migratory
Short-Finned Pilot Whale	*Globicephala macrorhynchus*	MMPA - Migratory
Sperm Whale	*Physeter macrocephalus*	ESA - Endangered; MMPA-Resident; RMI
Hawaiian Monk Seal	*Neomonachus schauinslandi*	ESA – Endangered

Common Name	*Scientific Name*	ESA, MMPA, or RMI Status
Sea Turtles		
Central West Pacific Green Sea Turtle	*Chelonia mydas*	ESA - Endangered; RMI
Hawksbill Sea Turtle	*Eretmocheleys imbricate*	ESA - Endangered; RMI
Leatherback Sea Turtle	*Dermochelys coriacea*	ESA - Endangered; RMI
North Pacific Loggerhead Sea Turtle	*Caretta caretta*	ESA - Endangered; RMI
Olive Ridley Sea Turtle	*Lepidochelys olivacea*	ESA - Threatened; RMI
Fish		
Bigeye Thresher Shark	*Alopias superciliosus*	UES
Oceanic whitetip shark	*Carcharhinus longimanus*	ESA - Threatened
Indo-West Pacific Scalloped Hammerhead Shark	*Sphyrna lewini*	ESA - Threatened
Giant Manta Ray	*M. birostris*	ESA- Threatened
Pacific Bluefin Tuna	*Thunnus orientalis*	UES
Coral		
	Acropora globiceps	ESA - Threatened
	Acropora retusa	ESA – Threatened
	Acropora speciosa	ESA – Threatened

Analysis of Effects

The UES does not specifically describe how to determine that an action is not likely to adversely affect UES-consultation species. However, Section 161 of the Compact specifically requires the U.S. to apply standards that are substantially similar to the ESA. Therefore, we will use the ESA standards in this UES consultation.

Under the ESA, "effects of the action" are all consequences to listed species or critical habitat caused by the proposed action, including the consequences of other activities caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action (50 CFR 402.02).

In order to determine that a proposed action is not likely to adversely affect ESA-listed species, we must find that the effects of the proposed action are reasonably certain to be discountable, insignificant, or completely beneficial. As defined in the *Endangered Species Consultation Handbook* (USFWS and NMFS 1998), beneficial effects are contemporaneous positive effects without any adverse effects to the species. Discountable effects are those extremely unlikely to occur. When the terms "discountable" or "discountable effects" appear in this document, they refer to potential effects that are found to support a "not likely to adversely affect" conclusion because they are extremely unlikely to occur. The use of these terms should not be interpreted as having any meaning inconsistent with our regulatory definition of "effects of the action."

Insignificant effects relate to the size of the impact and should never reach the scale where take occurs. “Take” is defined by the ESA as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. We define “harass” as to "create the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering” (Wieting 2016). We define “harm” as “an act which actually kills or injures fish or wildlife.” Such an act may include significant habitat modification or degradation where it actually kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, spawning, rearing, migrating, feeding or sheltering. Take of species listed as endangered is prohibited at the time of listing, while take of threatened species may not be specifically prohibited unless we have issued regulations prohibiting take under Section 4(d) of the ESA.

Based on best judgment, a person would not: 1) be able to meaningfully measure, detect, or evaluate insignificant effects; or 2) expect discountable effects to occur (USFWS & NMFS 1998). We applied this standard, as well as consideration of the probable duration, frequency, and severity of potential interactions, during the analysis of effects of the proposed action on ESA-listed marine species, as is described in the consultation request. We only discuss activities that have the potential to adversely affect UES- or ESA-listed species here.

Despite DAF’s use of BMPs, we identified the following stressors remain, and have the potential to affect ESA/UES-consultation species in the action area:

- Disturbance from human activity, equipment operation, vessel transits
- Elevated Noise Levels
- Vessel Strike
- Missile Strike
- Exposure to hazardous materials

We also considered the stressor of vessel groundings as synonymous with vessel strikes for ESA/UES-listed coral species in nearshore environments.

To assess the effects of proposed actions, we use an *exposure-response* assessment framework. Effects are discountable if exposure is extremely unlikely to occur. For this reason we first determine the probability of stressors co-occurring with individuals from the listed species, or features of critical habitat. For stressors where exposure is not discountable, we discuss the significance of the species’ response.

Disturbance from human activity, equipment operation, vessel transits
Disturbance from vessel movement could cause a behavioral response in the ESA/UES-listed sea turtles, marine mammals, and fish listed in Table 1 due to increased noise and movement. Typical behavioral responses include temporarily masking communications and/or acoustic environmental cues, alteration of ongoing behaviors, and avoidance. However, these species are highly mobile and are expected to avoid the disturbances. As mentioned above, the DAF intends to maintain a 50 m separation from all ESA and UES-listed species. Any alteration of ongoing behaviors or avoidance will be limited spatially and temporally and will be extremely unlikely to harm or harass any ESA-listed individuals, and are therefore insignificant.

The proposed activities may cause visual disturbance to the ESA/UES-listed species in Table 1. However, any disturbance is expected to be low in intensity and short in duration, and any

response will be low-impact and temporary. The DAF will monitor its vessel activities and will maintain a 50 m distance from any ESA and UES-listed species. Given the relatively short duration of proposed activities and the BMPs, we are reasonably certain that effects on ESA/UES-listed species will minor and not reach the level of harm or harassment, and are therefore insignificant.

Elevated noise levels

Vessels. Vessel noise can mask marine mammal underwater communications, mask received noises, and cause behavioral responses such as causing them to avoid noisy areas. Noise from shipping vessels are often at source levels of 150 to 190 dB re 1 µPa at 1m (BOEM 2011) with frequencies of 20 to 300 Hz (Greene and Moore 1995). Sound produced by smaller boats is typically at a higher frequency, around 300 Hz (Greene and Moore 1995) with source levels around 156 dB re 1 µPa rms underwater (Richardson et al. 1995) for vessels ranging 5-20 m in length. Vessels used for debris clean-up, equipment transport, and surveying the area will be vessels that are normally used for standard USAKA operations in Kwajalein Atoll.

The *Pacific Collector* is considered the largest vessel for this analysis and as such, we uses a source level that ranges from 150-190 dB re 1 µPa at 1m for this vessel size class (400 ft. long). However, due to implemented BMPs and the transient and temporary nature of the noise, the effects on cetaceans, elasmobranchs, pinnipeds, and sea turtles is expected to be insignificant. Exposure of threatened and endangered species to continuous vessel noise may occur. However, it is unlikely to adversely affect threatened and endangered species due to the temporary and transient nature of vessel noise; habituation of threatened and endangered species to the presence of vessel noise, and avoidance and mitigation measures associated with the action, which includes approach restrictions. Any effects to ESA/UES-listed species will be too small to detect or measure and are therefore insignificant.

Sea turtles hear from 200 Hz – 1 kHz, while large vessels operate at 20-300 Hz. Thus, the *Pacific Collector* operates within the hearing range of sea turtles for a range of 100 Hz and produces a continuous sound. Using the sound exposure guidelines (Popper et al. 2014), there is low probability of mortality, potential mortal injury, or recoverable injury even at close distances. While masking can be high and behavioral response by sea turtles may be high at near distances (Popper et al. 2014), due to the temporary and transient nature of vessel noise, habituation of threatened and endangered species to the presence of vessel noise, and given DAF's BMP regarding distance the vessel must be from sea turtles (50 m), we are reasonably certain that the potential effects of noise generated by the *Pacific Collector* on threatened and endangered sea turtles will not rise to the level of harm or harassment, and therefore is insignificant.

Noise generated by the smaller vessels used to look for debris will be approximately 168 dB rms re 1 µPa 1 m from the source while in transit (assuming the average sound level of vessels between 20 and 40 ft. from Kipple and Gabriele [2007]). While at the impact location, these boats will operate at slow speeds with low engine power and produce noise at approximately 157 dB rms re 1 µPa 1 m from the source (assuming the lowest sound level of vessels between 20 and 40 ft. from Kipple and Gabriele [2007]). Vessel-generated noise will be above the behavior thresholds for species in Table 1.

While this noise may result in a behavioral response, the effect will be temporary as the vessel passes by. As mentioned above, the DAF intends to maintain a 50 m separation from ESA/UES-listed marine mammals, turtles, and fish species. Furthermore, transiting will only expose

individuals for a minute or two as the vessel passes. Any masking of communication and/or acoustic environmental cues, alteration of ongoing behaviors, and avoidance will be limited spatially and temporally. Therefore, while ESA/UES-listed species may hear some sound and experience some disturbance from the proposed action, we are reasonably certain the effects will not reach the level of harm or harassment, and thus are insignificant.

Front end splashdown: The front end will splashdown in Kwajalein and the boosters will splashdown in the BOA. The DAF used peak sound pressure of 218 dB rms re 1 µPa associated with other test vehicle boosters and 240 dB rms re 1 µPa for splashdown of the booster based on prior actions (USAF 2021; DAF 2022). The Navy identified a threshold for non-auditory injury based on gastrointestinal bursting at 237 dB re: 1 µPa (Finneran and Jenkins 2012). The sounds estimated from the splashdowns are well below those thresholds and will not cause non-auditory injury to marine mammals, sea turtles, elasmobranchs, and large fishes.

We used a modified version of the publically available NMFS marine mammal sound calculator (https://www.fisheries.noaa.gov/national/marine-mammal-protection/marine-mammal-acoustic-technical-guidance, accessed 5/24/2022), using the single explosives worksheet entering the peak sound pressure levels (Table 2). Splashdown of the spent boosters and front end will create one quick temporary sound when they impact the water. The maximum distance to permanent threshold shift (PTS) for the boosters is 6 m and for the front end is 79 m. The sound level of splashdown for the boosters only exceeds PTS for high frequency cetaceans (pygmy sperm whales). All other marine mammals, fish, and sea turtles have a PTS threshold higher than the peak sound pressure of 218 dB for booster splashdown. Distances to PTS and temporary threshold shift (TTS) for all species for the front end splashdown is listed in Table 2. Based on: 1) The extremely low probabilities of direct or near impacts with these species (<1:100,000, see *Missile Strike*); 2) the short duration (near instantaneous) of generated sound; and 3) the low probabilities of an ESA/UES species being near the surface at the instant of booster or front end impact; the likelihood of exposure to splashdown is extremely unlikely and therefore discountable.

The sounds produced by splashdowns will be louder or equal to the 160 dB behavior response thresholds for all hearing groups, up to ½ mile away from the source for some species, and some species should be able to detect sounds (below behavior thresholds) for a few more miles. The sounds will be a short impulse, nearly instantaneous. We believe that, at most, an exposed individual may experience temporary behavioral disturbance in the form of slight changes in swimming direction or speed, feeding, or socializing, with no measurable effect on the animal's fitness. The individual will return to normal behavior within moments of the exposure. Therefore, while ESA/UES-listed species may hear some sound and experience some disturbance from splashdown, we are reasonably certain the effects will not reach the level of harm or harassment, and thus are insignificant.

Table 2. Distances to PTS and TTS for the splashdown of the boosters and front end.

Functional Hearing Group	Permanent Threshold Shift (PTS)			Temporary Threshold Shift (TTS)		
	Threshold (dB SPL_{peak})	Distance to PTS from splashdown (m, radius)		Threshold (dB SPL_{peak})	Distance to TTS from splashdown (m, radius)	
		Boosters	Front End		Boosters	Front End
Low-Frequency Cetaceans (baleen whales)	219	-	11	213	2	22
Mid-Frequency Cetaceans (dolphins, false killer, pilot, beaked, killer, melon-headed, and sperm whales)	230	-	3	224	-	6
High- Frequency Cetaceans (pygmy sperm whales)	202	6	79	196	13	159
Sea Turtles*	230	-	3	224	-	6
Fish**	229	-	3.5	186 dB SEL_{cum}	40	501

*PTS based on non-lethal injury threshold from Finneran and Jenkins (2012)
**PTS based on mortal injury threshold from Popper et al. (2014).

Vessel Strike

The proposed action will expose ESA-listed and UES-listed sea turtles, marine mammals, and fish species found in Table 1 to the risk of vessel strike from vessels during transits, mobile instrumentation platform, and debris collection operations.

Turtles: Kelly (2020) documented vessel collisions with sea turtles resulting in lethal and sub-lethal injuries. Sea turtles may be in the action area and could potentially be struck by transiting vessels during the proposed activities. While there are few data on vessel strikes in the RMI we have no indication that the rate of striking will be higher than it is in Hawaii. NMFS (2008) estimated 37.5 vessel strikes of sea turtles per year from an estimated 577,872 trips per year from vessels of all sizes in Hawaii. More recently, we estimated as many as 200 green sea turtle strikes annually in Hawaii (Kelly 2020). If these turtle strikes are evenly distributed around the islands, the probability of a green sea turtle strike from any one vessel trip is extremely low (on average 0.035%, calculated by dividing the most recent strike estimate of 200 per year by the best estimate of all vessel transits of 577,872 per year). However, green sea turtle strikes are not evenly distributed throughout the islands. They are concentrated in areas with high sea turtle

density and where small vessel activity is highest (e.g., near small boat harbors and boat launches), such as Kaneohe Bay and Pearl Harbor on Oahu (Kelly 2020).

Green sea turtles are most vulnerable to small vessels (<15 m), travelling at fast rates (>10 knots) (Kelly 2020). Increased vessel speed decreases the ability of sea turtles to recognize a moving vessel in time to dive and escape being hit, as well as the vessel operator's ability to recognize the turtle in time to avoid it. The *Pacific Collector* used in the proposed action will be large (400 ft.) but will operate at slow speeds (9 knots) while conducting survey activities. They will also be using other BMPs to reduce ship strike probability, including the use of dedicated lookouts, altering course to remain at least 50 m from ESA/UES-listed species, and if an animal comes within those distances, putting the engine in neutral until the animal is at least 12 m (40 ft.) away. The action area is not in a location similar to those identified by Kelly (2020) as a hot spot for green sea turtle strikes. It is in an area with overlap of boating activity and sea turtle habitat, but the boating activity in the action area is a small percentage of those Kelly (2020) identified. Therefore, the probability of a green sea turtle strike is likely less than the overall rate calculated above. Thus, we are reasonably certain the likelihood of exposure of any green sea turtle to vessel strikes from this action is extremely unlikely, and therefore discountable.

The other sea turtle species have a lower rate of striking than green sea turtles. This is likely mostly due to their low abundance numbers and preference for deeper offshore waters (Kelly 2020), although they have been documented in shallow coral reef habitats and in harbors (HHTN 2018). There were only four documented vessel strikes of hawksbill sea turtles between 1984 and 2020 and two olive ridley sea turtles in Hawaii (Kelly 2020). We have no documentation of vessel strikes on leatherback or loggerhead sea turtles in Hawaii.

We have no data to indicate the rate of vessel strike with these species will be higher in RMI than Hawaii, either. Because the probability of a project-related vessel striking any other the other sea turtles is even lower than that of a green sea turtle, and because of the BMPs included in this proposed action, we are reasonably certain the likelihood of exposure of any individual is extremely unlikely, and therefore discountable.

Marine mammals: Marine mammals surface to breathe, with calves surfacing more regularly than adults. While at the surface, a marine mammal is at risk of being struck by a vessel. There are few data on vessel strikes within the Atoll, but we have no indication that the rate of striking will be higher than it is in Hawaii. In a study by Lammers et al. (2003), 22 whale/vessel incidents were recorded between 1975 – 2003, with 14 of those occurring during the years from 1994 – 2003. The vast majority (17) of the vessel strikes were from vessels traveling at speeds in excess of 15 knots, and nearly all of them occurred in close proximity to the coastline of the main four Hawaiian Islands (Lammers et al. 2003). Vessels in the proposed action will be traveling at slow speeds during proposed activities (less than 9 knots), they will use dedicated lookouts, and only be in operation for short periods of time, limiting the already extremely low probability of a strike. Based on adherence to the BMPs, the collision risks from the references cited above, and the low abundance of most marine mammals and widely scattered nature of whales/dolphins in the action area; we are reasonably certain the likelihood of an individual from the marine mammal species listed in Table 1 being exposed to vessel strike during the proposed action is extremely unlikely, and therefore discountable.

Elasmobranchs: Studies on scalloped hammerhead sharks have shown that they have well-developed electrosensory systems and vision (Kajiura 2001) that presumably enables them to

detect activity in the water at a distance and to quickly move away from slow-moving vessels. While specific studies have not been conducted for oceanic whitetip sharks or giant manta rays for vessel avoidance, they are also elasmobranchs and highly mobile species. The lateral line in manta rays is poorly understood, however they also have a suite of other biological functions, which are considered highly sophisticated sensory systems (Bleckmann and Hoffmann 1999; Deakos 2010). This suggests that they possess similar capabilities of detection as other elasmobranchs and could avoid slow moving vessels as well. In addition, all three species remain below the surface of the water the vast majority of the time.

Because ESA/UES-listed sharks and rays spend minimal time at the surface of the water, are highly mobile and likely able to detect and avoid a slow-moving vessel, we are reasonably certain the likelihood of exposure of any individual to a vessel strike from this proposed action is extremely unlikely, and therefore discountable.

Corals: The action area includes coral reefs at Wake Atoll. There is potential for this proposed action to strike ESA-listed corals should a vessel find itself over a reef in water that is too shallow. However, vessel operators actively avoid causing damage to their vessels by avoiding groundings. The DAF further minimizes the risk of a vessel grounding by employing experienced vessel staff, requires trainings, requires operational and maintenance standards for vessels, implements slow boat operating speeds through established BMPs, uses observers to avoid interactions with listed species, and dictating preferable ocean conditions for such operations to commence with contingency plans to cancel or delay the action for favorable weather conditions. Additionally, in case of an emergency or safety situation, the captain and crew will rely on their expertise to anchor the vessel. Therefore, we are reasonably certain that the probability of exposure of corals to a vessel strike is extremely unlikely, and thus discountable.

Missile Strike

The proposed action will expose ESA-listed and UES-listed sea turtles, marine mammals, and fish species found in Table 1 to the risk of missile strike from the boosters that will splashdown in the BOA, and from the front end as it terminates in the deep ocean waters in Kwajalein. Hawaiian monk seal are not expected to occur at the terminal site and will no longer be discussed for this stressor.

Modelling methods to determine potential impacts of direct missile impacts to ESA/UES-listed species were discussed in the FE-1 Environmental Assessment (USN 2017a), Mariana Islands Training and Testing Activities Final Environmental Impact Statement (Appendix G in USN 2015), the Hawaii-Southern California Training and Testing Environmental Impact Statement (Appendix G in USN 2013) and NMFS' biological opinions on USAKA's FE-1 and FE-2 missile test operation (NMFS 2017, 2019). The probability analysis is based on probability theory and modified Venn diagrams with rectangular "footprint" areas for the individual animals and the component impact footprints within the action area. Species densities in the action area were estimated based on the best available scientific data incorporated in models of the Navy's Marine Species Density Database for the Hawaii-Southern California Training and Testing Study Area (USN 2017b). These analyses assume that all animals will be at or near the surface 100% of the time and that the animals are stationary. While these assumptions do not account for animals that spend the majority of time underwater or for any animal movement or potential avoidance to proposed activities, these assumptions should lead to a conservative estimate of direct contact

effect on listed species. The same methods were applied to this proposed action. Results are listed in Table 4 of the biological assessment and are incorporated by reference.

Turtles: Turtle species surface to breathe after spending hours foraging. However, the probability of a sea turtle being struck by any of the missile components is less than 0.0000004, or 1 in 2,500,000 (DAF 2022). Based on adherence to the BMPs and the low abundance of most sea turtles and widely scattered nature of sea turtles in the *Action Area*; we are reasonably certain the likelihood of an individual from the sea turtle species listed in Table 1 being exposed to missile strike during the proposed action is extremely unlikely, and therefore discountable.

Marine mammals: Marine mammals surface to breathe, with calves surfacing more regularly than adults. While at the surface, a marine mammal is at risk of being struck by the missile components. The highest probability of exposure for an ESA-listed species is for sperm whales (out of all ESA-listed species) at 0.000005 individuals, which corresponds to a 1 in 207,000 chance of contacting a sperm whale during the two tests combined (DAF 2022). Pantropical spotted dolphins (*Stenella attenuata*) have the highest estimated densities across the action area. They are not ESA-listed but are a consultation species under the UES. For both tests combined, the probability of exposure for pantropical spotted dolphins is 0.00001 individuals, which corresponds to a 1 in 101,000 chance of contact during the two flight tests combined (DAF 2022). Based on the low abundance of most marine mammals and widely scattered nature of whales/dolphins in the action area, we are reasonably certain the likelihood of an individual from the marine mammal species listed in Table 1 being exposed to missile strike during the proposed action is extremely unlikely, and therefore discountable.

Elasmobranchs: Studies on scalloped hammerhead sharks have shown that they have well-developed electrosensory systems and vision (Kajiura 2001) that presumably enables them to detect activity in the water at a distance and to quickly move away from sinking missile components. While specific studies have not been conducted for oceanic whitetip sharks or giant manta rays for missile avoidance, they are also elasmobranchs and highly mobile species. The lateral line in manta rays is poorly understood, however they also have a suite of other biological functions, which are considered highly sophisticated sensory systems (Bleckmann and Hoffmann 1999; Deakos 2010). This suggests that they possess similar capabilities of detection as other elasmobranchs and could avoid sinking missile components. In addition, all three species remain below the surface of the water the vast majority of the time. Abundance and distribution in Kwajalein is not well known for any of elasmobranch species. However, these species are captured by the RMI longline fleet suggesting they are present elsewhere in the waters of the RMI. Therefore, we are not able to calculate a density or impact estimates for these species. If we consider the impact rate for all other species under consideration, then an impact to one of these species will likely be less, as they will be at greater depths than species which surface to breathe. Because ESA/UES-listed sharks and rays spend minimal time at the surface of the water, and are highly mobile, we are reasonably certain the likelihood of exposure of any individual to a missile strike from this proposed action is extremely unlikely, and therefore discountable.

Corals: ESA/UES-listed corals are not expected to occur in the BOA or in Kwajalein Atoll where missile components are expected to impact. It is highly unlikely the missile guidance system would be so inaccurate to land nearshore or on land elsewhere in Kwajalein. These missiles have highly advanced guidance systems with superb accuracy. To date, no missiles have ever missed the target in the history of the program (D. Hasley, U.S. Army SMDC, pers. comm. to J.

Rudolph and R. Dean, NMFS Biologists, June 24, 2022). Additionally, the accuracy and precision of these munitions are monitored throughout their flight by career professionally trained military personnel, who can terminate the flight at any given time. As noted in the BE, a premature flight termination could become necessary if the launch vehicle guidance and control system were to malfunction, and the event the vehicle strayed from the expected trajectory. The launch vehicle has a Flight Termination System which provides the operator(s) the capability to destroy the missile throughout its flight. Therefore, we are reasonably certain that a missile strike to the reef is extremely unlikely and potential effects to corals are therefore discountable.

Exposure to hazardous materials

At the launch facility on Wake Island, animals could be exposed to emissions from the launch. Green sea turtles are the only ESA-listed species likely to be present in nearshore waters where inhalation could occur. Hawksbills are considered very rare, with their first documented sighting in 2022 (K. Roberts, Natural Resources Manager USAF 611th Civil Engineer Squadron, pers. comm. to various NMFS biologist at the Wake INRMP Annual Review held on June 21, 2022). However, the launch emissions are expected to dissipate quickly and will not reach beach habitats. Additionally, the hazardous materials from the launch itself are not reasonably certain to enter the marine environment, thus not affecting listed corals or other marine animals. Thus, the probability of exposure to hazardous materials to the ESA/UES-listed species in Table 1 is extremely unlikely, and therefore discountable.

The splashdown of the missile components both in the BOA and at Gagan Islet could contain unused chemicals or propellants used in the launch, which could expose marine species to toxic chemicals. Depending on the chemicals and their concentration, the effects of exposure may range between animals temporarily avoiding an area, to death of the exposed animals. However, these chemicals and propellants are expected to be consumed during the launch and flight of the missile and if any of these materials remain it will be minimal amount. Additionally, if any of these residual chemicals and propellants enter the water they will be diluted and disperse quickly because of the volume of water, wave action, and ocean currents. Thus, the probability of exposure to hazardous materials to the ESA/UES-listed species in Table 1 is extremely unlikely, and therefore discountable.

The missile components pose an ingestion risk as they will splashdown in the BOA and at Gagan Islet. However, the impact location is between 600 m and 4,000 m deep, and any debris that is leftover will sink to the deep-ocean floor where the listed species do not occur. Additionally, the DAF will also conduct a post-test evaluation of the splashdown location to ensure that all the components and debris have sank. If any components or debris are discovered, according to the BMPs, they will be cleaned up to minimize any entanglement or ingestion risk. We are reasonably certain that if any debris does not sink, it will be small and quickly cleaned up. Thus, the probability of hazardous material ingestion by the ESA/UES-listed species in Table 1 is extremely unlikely, and therefore discountable.

Accidental vessel discharges could contain hydrocarbon-based chemicals such as fuel oils, gasoline, lubricants, hydraulic fluids and other toxicants, which could expose protected species to toxic chemicals. Depending on the chemicals and their concentration, the effects of exposure may range between animals temporarily avoiding an area, to death of the exposed animals. The USAKA Environmental Standards prohibit the intentional discharge of toxic wastes and plastics into the marine environment. Additionally, DAF has incorporated these into the proposed action's conservation measures that include measures intended to prevent the introduction of

wastes and toxicants into the marine environment. Operators will respond to any spills immediately to minimize discharge to the lagoon or other water sources. Due to the BMPs (see above) proposed by DAF and short term of operations, we are reasonably certain the probability of vessels engaged in the proposed survey activities spilling or discharging contaminants is extremely unlikely. We are also reasonably certain that if a project related discharge occurred, it will be small and quickly cleaned up. Thus, the probability of exposure to hazardous materials to the ESA/UES-listed species in Table 1 is extremely unlikely, and therefore discountable.

Conclusion

Considering the information and assessments presented in the consultation request and available reports and information, and in the best scientific information available about the biology and expected behaviors of the ESA/UES-listed marine species considered in this consultation, all effects of the proposed action are either discountable or insignificant. Accordingly, we concur with your determination that the proposed action is not likely to adversely affect the species listed in Table 1.

Conservation Recommendations

Section 7(a)(1) of the ESA directs Federal agencies to use their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are non-binding suggestions resulting from a formal or informal consultation that: 1) identify discretionary measures a Federal agency can take to minimize or avoid the adverse effects of a proposed action on listed or proposed species, or designated or proposed critical habitat; 2) identify studies, monitoring, or research to develop new information on listed or proposed species, or designated or proposed critical habitat; and 3) include suggestions on how an action agency can assist species conservation as part of their action and in furtherance of their authorities under section 7(a)(1) of the Act. [50 CFR §402.02].

- NMFS recommends providing us a copy of the post-test evaluation results related to records of any observed or recovered animals potentially impacted at the terminal site (ESA/UES-listed or not). This will help influence expectations for in-water impacts at the site(s) moving forward and confirm expectations of the statistical methodologies used to support our concurrence.
- NMFS recommends the DAF consider placement of a hydrophone(s) near the terminal location to measure the acoustic metrics of sound exposure effects (isopleths) from in-water impact. This will assist in determining the in-water range of expected acoustic effects compared to DAF and NMFS' modelled expectations thereby assisting both agencies expectation of the action area and effect analyses in the future.
- NMFS recommends attempting to better understand species abundance, distribution, and site fidelity throughout the offshore terminal location(s), and surrounding waters, in Kwajalein. Due to the offshore pelagic nature of sites, visual surveys whether by vessel or aircraft, passive acoustic monitoring, photograph logs, or other remote monitoring methodologies will be recommended depending on species-specific variables. Tagging studies or remote baited stations could be potentially be implemented for species like oceanic whitetip sharks, but will require additional consultation to implement those types of activities.

Reinitiation Notice

This concludes consultation on your action. However, our analysis focused solely on compliance with our consultation regarding UES-consultation species. Any additional compliance review that may be required of NMFS for this action (such as assessing impacts on UES-coordination species) would be completed by NMFS Habitat Conservation Division in separate communication and by the Appropriate Agency Representative (DPAA/KMP), if applicable.

If you have further questions, please contact Joshua Rudolph at joshua.rudolph@noaa.gov. Thank you for working with NMFS to protect our nation's living marine resources.

Sincerely,

Michael Tosatto
Regional Administrator

NMFS File No.: PIRO-2022-00613
PIRO Reference No.: I-PI-22-2008-MT

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Appendix B

Undertaking under Section 106: U.S. Space Force – Space Systems Command Flight Tests, Wake Island

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From:	Fuller, David G CIV USARMY SMDC (USA)
To:	Karen Barnes - KFS; Karen Hoksbergen - KFS; Hannah McCarty - KFS; Paige Peyton - KFS
Cc:	Eric Sorrells - KFS
Subject:	Fwd: USSF SSC FT EA/OEA -- Request for information from the 611th CES
Date:	Tuesday, April 12, 2022 2:02:15 PM
Attachments:	FINAL WIA ICRMP- July 2020.pdf WIA_ICRMP_Appendix A, B, C Inventory Tables.xlsx

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From: "LEEPER, KARLENE B GS-12 USAF PACAF 611 CES/CEIEC"
[redacted]
Date: Tuesday, April 12, 2022 at 1:48:34 PM
To: "Fuller, David G CIV USARMY SMDC (USA)"
[redacted]
Cc: "Hasley, David C CIV USARMY SMDC (USA)"
[redacted], "Mauser, Richard J CIV USAF AFCEC (USA)"
[redacted], "Roy, Lori A CIV USAF 11 AF (USA)"
[redacted], "Roy, Lori A CIV USAF 11 AF (USA)"
[redacted]
Subject: RE: USSF SSC FT EA/OEA -- Request for information from the 611th CES

David,

We do not have an Historic Preservation Plan. The project needs to comply with National Historic Preservation Act section 106, including consultation with Alaska State Historic Preservation Office and the Advisory Council on Historic Preservation. I think that one could promote a finding of "no adverse effects to historic properties" for this project to the consulting parties. We do not have a Programmatic Agreement for SMDC or other activities. The current Wake Island Integrated Cultural Resources Management Plan (ICRMP) Is attached, which should be all you need. Please remember that the entire atoll falls within the Wake Atoll National Historic Landmark, one of the most important historic properties of the United States.

Please let me know if you would like additional information.

V/r

Karlene

Karlene Leeper

Archaeologist

611 CES/CEIE

JBER AK 99506

[redacted]

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Monday, April 11, 2022 9:12 AM
To: LEEPER, KARLENE B GS-12 USAF PACAF 611 CES/CEIEC [redacted]
Cc: Hasley, David C CIV USARMY SMDC (USA) [redacted]
Subject: USSF SSC FT EA/OEA -- Request for information from the 611th CES

Ms Leeper,

Based on the comments provided by the 611th CES, we are requesting the data/information listed below from the 611th CES.

I do not have a email for James Stanford. Would you please forward to him.

Send documents to my email or if too big DoD SAFE site would work.

Please let me know if there are any questions or concerns.

Data Request List:

1. Current Wake Island Historical Preservation Plan (HPP) [Karlene Leeper-611th CES]
2. Current Wake Island Integrated Cultural Resources Management Plan (ICRMP) [Karlene Leeper611th CES]
3. Any additional cultural resources distribution/data for Wake Island (Karlene Leeper-611th CES)
4. Current Wake Island Integrated Natural Resources Management Plan (INRMP) [James Stanford-611th CES]
5. Current Wake Island Biosecurity Plan (James Stanford-611th CES)

Thank you,

David

David Fuller

NEPA Program Manager

Environmental Division/NEPA Branch

U.S. Army Space & Missile Defense Command

Redstone Arsenal, AL

[redacted]

DEPARTMENT OF THE ARMY
U.S. ARMY SPACE AND MISSILE DEFENSE COMMAND
POST OFFICE BOX 1500
HUNTSVILLE, ALABAMA 35807-3801

REPLY TO
ATTENTION OF

Environmental Division

17 May 2022

Alaska State Historic Preservation Officer
Office of History and Archaeology
550 W 7th Ave Ste 1310
Anchorage, AK 99501
Attn: Judith Bittner, SHPO

SUBJECT: Undertaking under Section 106: U.S. Space Force – Space Systems Command Flight Tests, Wake Island

Dear Ms. Bittner:

In accordance with Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations, 36 Code of Federal Regulations (CFR) part 800, the United States (U.S.) Army Space and Missile Defense Command (USASMDC) is providing information for your review and concurrence regarding the above-referenced Undertaking.

Description of the Undertaking

The U.S. Space Force (USSF) proposes to test a flight launch vehicle from the U.S. Missile Defense Agency (MDA) launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), U.S. Army Kwajalein Atoll (USAKA), Republic of the Marshall Islands (RMI). The RTS is managed by the USASMDC. The test mission would require up to two test flights, which would be executed by the USSF – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base (AFB), New Mexico.

The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for analysis under the National Environmental Policy Act (NEPA) during preparation of the USSF-SSC Flight Test Environmental Assessment / Overseas Environmental Assessment (EA/OEA); however, the DAF has requested MDA and the USASMDC to participate as Cooperating Agencies in the program and to analyze the environmental impacts from the two flight test demonstrations, including any potential effects on historic properties within the Area of Potential Effects (APE).

While the flight test range begins at the Wake Island launch area, it terminates offshore within the Broad Ocean Area (BOA), near Gagan Islet in the Kwajalein Atoll, where all test vehicle components and debris are expected to sink to the ocean bottom. Activities on Gagan Islet are restricted to the use of existing facilities, none of which are U.S.-eligible or listed historic

properties. In addition, there are no requirements for new construction, soil disturbance, or clearing of vegetation either at Gagan Islet or Wake Island. Coordination with the RMI is being conducted on a separate track and in accordance with U.S./RMI procedures found in the current (2021) USAKA Environmental Standards (UES); therefore, this consultation letter is specific solely to the Wake Island project site, which is encompassed entirely within the Wake Island National Historic Landmark (NHL).

Wake Island Background and Area of Potential Effects

Background

Prehistory

There is no archaeological evidence for prehistoric settlement on Wake Atoll. While there is limited evidence that the atoll was occasionally visited by small groups of Pacific Islanders during prehistoric periods, the long and dangerous ocean voyages, a lack of fresh ground water, sparse rainfall, and a lack of other essential resources on the atoll would have discouraged semi-permanent or permanent settlement. Seabird plumage, albatross wing bones used as tattooing chisels, and a rare orange flower (*kio*) found on Wake Atoll have been noted as part of Marshallese oral traditions and in the 1960s, civilian personnel working on Wake Atoll reported finding Polynesian adze heads; however, those reports are unconfirmed. Given the harsh environment and what is known from modern studies of the Atoll, the probability of prehistoric occupation and the presence of traditional cultural resources is remote.

History

Wake Island in its entirety and all of the buildings and structures contained therein, were designated an NHL in 1985 in order to preserve both the battlefield where important WWII events occurred, and Japanese and American structures from that period. The Wake Island NHL nomination package defines the landmark's boundaries as "the outer edge of the reef that surrounds the Wake Island [Atoll] so as to include the reef, the three islands, and the lagoon, which includes a number of historic shipwrecks and possible other artifacts." Pan American facilities and the U.S. Naval submarine and aircraft base, constructed prior to WWII, are also included in the NHL The period of significance of the NHL is accepted to be 1941-1945.

In addition, a Cold War-era (1946-1989) survey of 33 Wake Atoll buildings and structures was conducted in 2007. Although not part of the NHL, two of the 33 buildings (Buildings 1502 and 1601) were determined National Register-eligible under the Wake Atoll historic context. Building 1502 (Base Operations/Terminal-air passenger) was constructed in 1962. In a 2007 Memorandum of Agreement (MOA) between the USAF and the Advisory Council on Historic Preservation (ACHP), the USAF agreed to treat Building 1502 as if it were eligible for listing in the National Register. The building was subsequently documented to an appropriate level of Historic American Building Survey (HABS) standards before remodeling commenced (documentation completed in 2008). In 2009, the National Park Service (NPS) reviewed documentation regarding Building 1502 and determined that it was individually eligible for National Register listing under Criterion A. The Keeper of the National Register concurred in 2010; therefore, Building 1502 is managed as a National Register-eligible property.

Building 1601 (Wake Island Control Tower) was completed in 1957 and heavily damaged by Typhoon Ioke in 2006. While part of Building 1601 remains in use, the tower itself was determined to be unsafe and a 2014 MOA with the Alaska SHPO provided for partial demolition of the building. Consultation included the National Park Service, (NPS) Pacific West Region, National Historic Landmarks Program; the U.S. Fish and Wildlife Service, and the ACHP and all declined to participate. Mitigation for the demolition of the control tower included Level II Historic American Buildings Survey (HABS) recordation; development of an education program at Wake Atoll and brochure to address stewardship of historic properties at Wake Atoll; and historic preservation training at Wake Air Station. Demolition of the tower portion of Building 1601 is scheduled to be completed by the end of 2025. The remaining portion of the building is used by MDA and continues to be treated as a historic property.

Area of Potential Effects

All of the Wake Island launch facilities and activities potentially affected by this Undertaking are situated near the southeasternmost end of the island (**Figure 1**). The direct APE encompasses the existing launch pad and its associated infrastructure elements from which the flight test vehicle will be launched. Within the indirect APE, there is a scattering of World War II NHL features and the two noted National Register-eligible Cold War-era buildings. Building 1502 is approximately 4,000 feet from the launch area; Building 1602 is approximately 2,000 feet from the launch area.

Determination of No Adverse Effects

Potential effects on historic properties from the USSF SSC flight test launches within the direct or indirect APEs would be vibrational effects for a brief period of time during the launch phase or the remote possibility of an aborted launch or unexpected failure of the launch vehicle on the launch pad (or after launch) which could create falling debris. There would be no sonic booms generated by the launches.

USSF-SSC flight test activities involve solely the analysis, testing, and launch of up to two flight test vehicles from the Wake Island launch pad area. The launch pad is Cold War-era construction but was not identified as a historic property during the 2007 Cold War survey. The Wake launch area has been repeatedly used and repaired over time and the surrounding area has been impacted by previous construction and operational use. There are no known subsurface resources (prehistoric, historic, or traditional cultural resources) within the direct APE and no requirements for new facility or infrastructure construction, clearing of vegetation, trenching, or other ground disturbance.

Within the vicinity of the Wake Island launch pad (indirect APE), there is a scattering of identified above ground resources associated with the NHL and the two identified Cold War-era buildings, both of which are subject to the requirements in the two MOAs noted above. Both Cold War-era resources are of sufficient distance from the launch pad that any effects from launch activities would be minimal.

There is very low probability for adverse effects to occur during the two USSF-SSC flight test launches given the lack of identified historic properties within the direct APE, no planned ground disturbing activities, a lack of proposed modifications for any NHL or Cold War-era resources,

and the distance of Buildings 1502 and 1601 from the launch pad. Effects from incidental debris fall during the launches would be minimal. Therefore, activities associated with the USSF SSC flight test launch program would have no adverse effects on characteristics that qualify Wake Island properties which are eligible for, or listed in, the National Register or elements of the NHL.

The intentional or incidental collection of cultural resources anywhere within the NHL is prohibited. Launch-associated personnel would be cautioned about such activities and briefed on the penalties that could be incurred if sites are damaged or destroyed.

Interagency Consultation

The DAF coordinated with the 611th Civil Engineering Squadron (CES) Cultural Resources Manager at Joint Base Elmendorf-Richardson in Anchorage, during preparation of the preliminary final USSF SSC Flight Tests EA/OEA. During that coordination the 611th CES CRM indicated that a No Adverse Effect determination would be the appropriate finding. Because the Undertaking is within the boundary of the Wake Island NHL, consultation is also being undertaken with the National Park Service National Historic Landmarks Program and the Advisory Council on Historic Preservation. If you concur with our assessment of no adverse effects, please sign and return the enclosed copy of this letter within 30 days.

If you have any questions about this Undertaking and the determination of effects, please contact David Fuller, USASMDC Environmental Division, regarding this consultation request at 256-425-2016 or david.g.fuller6.civ@army.mil.

Sincerely,

HILL.WELDON.H.JR.1216862682 Digitally signed by HILL.WELDON.H.JR.1216862682 Date: 2022.05.17 13:49:10 -05'00'

Weldon H. Hill, Jr.
Deputy Chief of Staff for Engineering
U. S. Army Space and Missile Defense Command

Attachment: Section 106 Review Checklist

CC: Dr. Elaine Jackson-Retondo, National Park Service National Historic Landmarks Program

I concur with the above-stated No Adverse Effects determination.

_____

Alaska State Historic Preservation Officer Date

Figure 1

[Non-DoD Source] US Space Force - Space Command Flight Test, Wake Island Section 106

Hellmich, Amy S (DNR) [redacted]
Thu 6/9/2022 5:41 PM
To: Fuller, David G CIV USARMY SMDC (USA) [redacted]
3130-1R AF / 2022-00656

Good afternoon,

The Alaska State Historic Preservation Office (AK SHPO) received your correspondence (dated May 17, 2022) concerning the subject project on May 19, 2022. Following our review of the documentation provided, we concur with the finding of No Historic Properties Adversely Affected. Please note that our office may need to re-evaluate our concurrence if changes are made to the project's scope or design.

As stipulated in 36 CFR 800.3, other consulting parties such as the local government and Tribes are required to be notified of the undertaking. Additional information provided by the local government, Tribes, or other consulting parties may cause our office to re-evaluate our comments and recommendations. Please note that our response does not end the 30-day review period provided to other consulting parties.

Should unidentified historical or archaeological resources be discovered or inadvertently effected in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register of Historic Places eligibility criteria (36 CFR 60.4), in consultation with our office. Please note that some resources can be deeply buried or underwater.

This email serves as our office's official correspondence for the purposes of Section 106. Thank you for the opportunity to review and comment. Please contact me at [redacted] or amy.hellmich@alaska.gov if you have any questions or we can be of further assistance.

Best regards,
Amy Hellmich

Amy Hellmich
Review and Compliance – Architectural Historian II
Alaska State Historic Preservation Office
Office of History and Archaeology

550 West 7th Avenue, Suite 1310
Anchorage, AK 99501-3561
[redacted]
Teleworking – Email is the best method of communication.

From: [redacted]
To: Paige Peyton - KFS
Subject: FW: [External] e106 Process Question
Date: Wednesday, June 15, 2022 8:20:24 AM

From: LaShavio Johnson [redacted]
Sent: Wednesday, June 15, 2022 6:13 AM
To: [redacted]
Subject: RE: [External] e106 Process Question

Good Morning Ms. Peyton.
It is fine for you to check both boxes.
Thank you for your email.

LaShavio Johnson
HPT, Office of Federal Agency Programs

From: paige.peyton[redacted]]
Sent: Tuesday, June 14, 2022 2:19 PM
To: e106 <e106@achp.gov>
Subject: [External] e106 Process Question

Good Morning,

I am assisting a client with the preparation of an ACHP e106 form, but would like to make sure I am asking the correct question in the first section of the form.

The Undertaking involves a National Historic Landmark, but the effects from the Undertaking have been determined to be not adverse by the agency and the affected SHPO has concurred. A response from the NPS, National Landmarks Program is expected in the next few days. Both response letters will be attached to the e106 form.

Because it is an NHL, I initially chose "notify the ACHP of a finding that an undertaking *may* adversely affect historic properties." Should I instead just check the box for "invite the ACHP to participate in a Section 106 consultation", or perhaps check both boxes?

Thank you for your assistance.

Paige Peyton
[redacted]
Pacific Coast Time

From:	Jackson-Retondo, Elaine
To:	Fuller, David G CIV USARMY SMDC (USA)
Cc:	Paige Peyton - KFS; Hasley, David C CIV USARMY SMDC (USA)
Subject:	Re: [EXTERNAL] Re: USSF SSC Flight Test Project Review
Date:	Thursday, July 7, 2022 4:59:04 PM

Good afternoon,

Thank you for providing a digital copy of correspondence (dated May 17, 2022) submitted to the Alaska State Historic Preservation Officer regarding the proposed U.S. Space Force – Space Systems Command Flight Tests, Wake Island undertaking. The correspondence included information about the undertaking, a finding of effect and request for SHPO concurrence on a finding of No Adverse Effect. The correspondence also includes supporting documentation that identifies the National Historic Landmarks Program as having approval jurisdiction, which is not accurate under Section 106, unless there is an agreement that I am not aware of that stipulates NHL Program approval is needed.

In accordance with 36 CFR 65.7 the National Park Service carries out monitoring activities to determine whether NHLs retain their integrity and to advise regarding preservation standards and techniques. These activities are carried out by staff in NPS regional offices. Additionally, in accordance with 36 CFR 800.10, federal agencies are required to notify the Secretary of Interior of any consultation involving a National Historic Landmark and invite the Secretary to participate in the consultation where there may be an adverse effect. The Secretary acts through the Director of the NPS as described in 36 CFR 800.16(u). These activities are typically carried out by regional staff. It is in this capacity that the Regional NHL Program, IR 8, 9, 10 and 12 provides the following comments.

We agree with the finding of No Adverse Effect for the undertaking as described in the correspondence to the AK SHPO and with the conditions set forth by the AK SHPO in their June 9, 2022 email response, which includes the requirement for further consultation, should unidentified historical or archaeological resources be discovered or inadvertently effected in the course of the project. NPS also requests further consultation in the event of unanticipated effects to known resources, including the structures (called features in the correspondence) that are located within the APE and contribute to the Wake Island NHL.

Thank you for confirming that APE for the landing area does not include Roi Namur Island NHL.

Please do not hesitate to contact me if you have questions.

Best regards,
Elaine

Elaine Jackson-Retondo, Ph.D.
Region Preservation Partnerships and History Programs Manager
Interior Regions 8, 9, 10 and 12

National Park Service
333 Bush Street, Suite 500
San Francisco, CA 94104
[redacted]

July 27, 2022

Mr. David Fuller
Environmental Division
US Army Space and Missile Defense Command
Post Office Box 1500
Huntsville, Alabama, 35807-3801

Ref: *Space Systems Command Flight Tests from Wake Island to Republic of the Marshall Islands Wake Atoll, US Minor Outlying Islands; US Army Kwajalein Atoll, Republic of the Marshall Islands*
ACHP Project Number: 018550

Dear Mr. Fuller:

On July 13, 2022, the Advisory Council on Historic Preservation (ACHP) received your documentation requesting our review of a finding of no adverse effect for the referenced undertaking.

Please note that the ACHP has issued revised regulations, "Protection of Historic Properties" (36 CFR Part 800) that streamline the Section 106 review process. Under the revised regulations (Section 800.5), it is no longer necessary to submit a determination of No Adverse Effect to the ACHP for review if the State Historic Preservation Officer and/or Tribal Historic Preservation Officer agree with your determination, even if a National Historic Landmark (NHL) is involved. The federal agency only need to request the ACHP's participation in any consultation to resolve adverse effects on a NHL conducted under Section 800.6 (Section 800.10(b)). For information on the regulations and related background material, please visit our website at www.achp.gov.

In your notification, you state that coordination with the Republic of the Marshall Islands is happening in accordance with the *Environmental Standards and Procedures for United States Army Kwajalein Atoll (USAKA) Activities in the Republic of Marshall Islands* (2021). Please note that federal agencies are required to comply with Section 106 of the National Historic Preservation Act (NHPA) when the agency has direct or indirect jurisdiction over a proposed federal undertaking in any State. Further, the NHPA's definition of "State" includes the Republic of the Marshall Islands (see 54 U.S.C. 306108, 300317(2)). Therefore, it is clear from the plain statutory language that Section 106 requires the Department of the Army to take into account the effects of its undertaking on historic properties in the Republic of the Marshall Islands.

If you have any questions, please contact Megan Borthwick at (202) 517-0221 or by e-mail at

mborthwick@achp.gov and reference the ACHP Project Number above.

Sincerely,

Christopher Koeppel
Assistant Director
Office of Federal Agency Programs
Federal Property Management Section

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Appendix C
Notice of Availability

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Notice of Availability

U.S. Space Force – Space Systems Command Flight Tests
Preliminary Final
Environmental Assessment / Overseas Environmental Assessment (EA/OEA)

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

The Preliminary Final USSF SSC Flight Tests EA/OEA analyzes the environmental impacts from the test launch of up to two flight test demonstrations from Wake Island toward the RTS in the Republic of the Marshall Islands, which operates under a Compact of Free Association with the United States and follows regulatory provisions of the NEPA.

The Preliminary Final USSF SSC Flight Tests EA/OEA and Draft Finding of No Significant Impact (FONSI) are available at http://ussf-ssc-eaoea.govsupport.us. Copies of the EA/OEA and Draft FONSI were placed in the Grace Sherwood Library, Kwajalein Island; the Roi-Namur Library, Marshall Island and the Wake Island Airport Lobby, Wake Atoll.

Public comments on the Preliminary Final EA/OEA and Draft FONSI will be accepted from **11 July 2022** to **9 August 2022** and can be provided in either of the following ways: (1) E-mail comments by **9 August 2022** to ussf-ssc-eaoea-comments@govsupport.us; (2) Mail comments, postmarked no later than **9 August 2022**, to: USASMDC, ATTN: SMDC-EN (D. Fuller), P.O. Box 1500, Huntsville, AL 35807.

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Appendix D
Correspondence – Agencies and Organizations

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Email Communication with USFWS, Pacific Islands Fish and Wildlife Office, Aquatic Ecosystem Conservation Program

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 8:47 AM
To: Dan Polhemus
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Dr. Polhemus,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.
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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with NMFS, Pacific Islands Regional Office, Habitat Conservation Division

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 8:52 AM
To: Kolinski, Steven P CIV (USA)
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Mr. Kolinski,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.
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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with RMIEPA, Majuro

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:39 AM
To: [redacted]
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms Phillip,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

The Preliminary Final USSF SSC Flight Tests EA/OEA analyzes the environmental impacts from the test launch of up to two flight test demonstrations from Wake Island toward the RTS in the Republic of the Marshall Islands, which operates under a Compact of Free Association with the United States and follows regulatory provisions of the NEPA.

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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with U.S. Army Corps of Engineers

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:05 AM
To: [redacted]
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Mr. Griffin,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with U.S. Army Corps of Engineers, Honolulu District

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:07 AM
To: Desilets, Michael E CIV USARMY CEPOH (USA)
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Mr. Desilets,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with U.S. Environmental Protection Agency, Region 9, Pacific Islands Office

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:11 AM
To: Elena Vaouli
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms. Elena,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with U.S. Environmental Protection Agency, Region 9, Pacific Islands Office

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 12:00 PM
To: Vitulano, Karen
Subject: Re: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Thanks Karen, we will add you to the list for future emails.
The web site is now live, so you can use the link to get the documents.

v/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

From: Vitulano, Karen [redacted]
Sent: Thursday, July 7, 2022 11:53 AM
To: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Subject: [URL Verdict: Unknown][Non-DoD Source] FW: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

All active links contained in this email were disabled. Please verify the identity of the sender, and confirm the authenticity of all links contained within the message prior to copying and pasting the address to a Web browser.

Hi David – Elena forwarded this NOA to me – can you provide me with the document or a link to it? Also – please put me on your contact list for NEPA review for EPA. We should also be receiving any NEPA-related announcements. Thank you.

~

Ms. Karen Vitulano
U.S. Environmental Protection Agency, Region 9
Environmental Review Branch
Tribal, Intergovernmental and Policy Division
75 Hawthorne St. TIP-2
San Francisco, CA 94105
Ancestral land of the Ohlone
PHONE [redacted]

"Do unto those downstream as you would have those upstream do unto you." --*Wendell Berry*

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 7:11 AM
To: Vaouli, Elena [redacted]
Subject: [SPAM-Phish] NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms. Elena,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.
The Preliminary Final USSF SSC Flight Tests EA/OEA analyzes the environmental impacts from the test launch of up to two flight test demonstrations from Wake Island toward the RTS in the Republic of the Marshall Islands, which operates under a Compact of Free Association with the United States and follows regulatory provisions of the NEPA.
The Preliminary Final USSF SSC Flight Tests EA/OEA and Draft Finding of No Significant Impact (FONSI) are available at Caution-http://ussf-ssc-eaoea.govsupport.us < Caution-http://ussf-ssc-eaoea.govsupport.us/ > . Public comments on the Preliminary Final EA/OEA and Draft FONSI will be accepted from **11 July 2022** to **9 August 2022** and can be provided in either of the following ways: (1) E-mail comments by **9 August 2022** to ussf-ssc-eaoea-comments@govsupport.us < Caution-mailto:ussf-ssc-eaoea-comments@govsupport.us > < Caution-mailto:ussf-ssc-eaoea-comments@govsupport.us > ; (2) Mail comments, postmarked no later than **9 August 2022**, to: USASMDC, ATTN: SMDC-EN (D. Fuller), P.O. Box 1500, Huntsville, AL 35807. Attached for your use is a blank comment response matrix. Please let me know if there are any questions.

V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with Alaska State Historic Preservation Office

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:18 AM
To: [redacted]
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms. Bittner,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with the Advisory Council on Historic Preservation, Office of Federal Agency Programs

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:20 AM
To: [redacted]
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms. Kerr,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.
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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with USFWS, Pacific Islands Fish and Wildlife Office

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Thursday, July 7, 2022 9:15 AM
To: [redacted]
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms. Mullett,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.

The Preliminary Final USSF SSC Flight Tests EA/OEA analyzes the environmental impacts from the test launch of up to two flight test demonstrations from Wake Island toward the RTS in the Republic of the Marshall Islands, which operates under a Compact of Free Association with the United States and follows regulatory provisions of the NEPA.

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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

Email Communication with the National Park Service, National Historic Landmark Program

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Monday, July 11, 2022 8:22 AM
To: Jackson-Retondo, Elaine
Subject: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Notice of Availability: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final Environmental Assessment / Overseas Environmental Assessment and Draft Finding of No Significant Impact

Ms Jackson-Retondo,

The United States (U.S.) Space Force (USSF) proposes to test a flight launch vehicle from launch facilities on Wake Island to the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS), managed by the U.S. Army Space and Missile Defense Command (USASMDC), in the Kwajalein Atoll. While Wake Island is managed and controlled by the U.S. Air Force Pacific Air Forces Regional Support Center, the launch facilities themselves are controlled and operated by the U.S. Missile Defense Agency (MDA). The test mission would require two test flights, which would be executed by the U.S. Space Force (USSF) – Space Systems Command (SSC) Launch Enterprise, Small Launch and Targets Division, located at Kirtland Air Force Base, New Mexico. The Department of the Air Force (DAF) has environmental management and oversight authority for USSF and is therefore the lead agency for this National Environmental Policy Act (NEPA) analysis. On 21 April 2022, the USASMDC and MDA were requested by the DAF to become Cooperating Agencies.
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V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

From: "Steve Kolinski - NOAA Federal" [redacted]
Date: Friday, July 15, 2022 at 5:40:54 PM
To: "Fuller, David G CIV USARMY SMDC (USA)" [redacted]
Cc: "Hasley, David C CIV USARMY SMDC (USA)" [redacted]
Subject: Re: [Non-DoD Source] Re: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

Hi David.

Thank you for the opportunity to review the USSF SSC EA/OEA. I reviewed the document and do not have any substantial comments. The document has been shared with our NMFS protected resources division and if they have comments they will forward to the address provided in the initial notice.

Have a great weekend.

Aloha

Steve

On Thu, Jul 14, 2022 at 10:56 AM Fuller, David G CIV USARMY SMDC (USA) [redacted] wrote:

> Steve,
>
> There is a dropdown at the top that should give you the documents.
> I attached the EA, hope not too big files to handle.
>
> Impact is in the BOA close to RMI.
> We are following the UES compliance.
>
> I will let David weigh in, but wanted to get this EA to you.
>
> V/r,
> David
>
> David Fuller
>
> NEPA Program Manager
>
> Environmental Division/NEPA Branch
>

> U.S. Army Space & Missile Defense Command
>
> Redstone Arsenal, AL
>
> [redacted]
>
>
>
> From: Steve Kolinski - NOAA Federal [redacted]
> Sent: Thursday, July 14, 2022 3:46 PM
> To: Fuller, David G CIV USARMY SMDC (USA) [redacted]
> Cc: Hasley, David C CIV USARMY SMDC (USA) [redacted]
> Subject: [Non-DoD Source] Re: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI
>
> Hi David.
>
> Hope all is very well with you. Thanks for reaching out on this. I'm
> attempting to download the document but seem to be caught in a loop,
> as the links direct me to a web directory, and the web directory links
> send me to the web directory. None of the links appear to send me to
> a document (it could just be me, but I've clicked on most everything I
> can see to no avail).
>
> I'm also trying to place this project from a regulatory standpoint. I
> understand this is NEPA, and NEPA applies in the US and RMI for US
> activities. However, given RTS involvement and presuming reentry
> within RMI territorial waters (is that correct?), will we be seeing
> requests for application of the UES (I don't recall seeing this
> project before, but there is a lot going on so it may be that I did)?
> If so, does the NEPA anticipate UES compliance and recommendations?
>
> Appreciate any assistance and clarification you may provide.
>
> Aloha
>
> Steve
>
[redacted]

Email Communication with USFWS, Pacific Islands Fish and Wildlife Office, Aquatic Ecosystems Conservation Program

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From: McCarthy, Nadiera [redacted]
Sent: Monday, August 8, 2022 2:31 PM
To: ussf-ssc-eaoea-comments@govsupport.us
Cc: Polhemus, Dan [redacted]; Raynal, Jeremy M [redacted]; Kwon, James [redacted]
Subject: Comments on USSF SSC Flight Test EA/OEA

Good morning-

Attached are the combined comments from the U.S. Fish and Wildlife, Pacific Islands Fish and Wildlife Office, on the Preliminary Final USSF SSC Flight Test Environmental Assessment/Overseas Environmental Assessment and Draft Finding of No Significant Impact (DFONSI).
If there is an issue with the attachment, please let us know so that it can be submitted in a different format.

-Nadiera Sukhraj

><> ><> ><> ><> ><> ><> ><>
Nadiera Sukhraj, Ph.D
Aquatic Ecosystems Conservation
and Environmental Contaminants
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Blvd., Rm 3-122
Honolulu, HI 96850
[redacted]
[redacted]
><> ><> ><> ><> ><> ><> ><>

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

August 9, 2022

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
P.O. Box 1500
Huntsville, Alabama 35807

Subject: U.S. Space Force, Space Systems Command Flight Tests, Preliminary Final Environmental Assessment/Overseas Environmental Assessment

Dear Mr. Fuller:

The U.S. Environmental Protection Agency has reviewed the above-referenced document pursuant to the National Environmental Policy Act, Council on Environmental Quality regulations (40 CFR Parts 1500-1508), and our NEPA review authority under Section 309 of the Clean Air Act.

The U.S. Space Force proposes to test a flight launch vehicle from launch facilities on Wake Island towards the U.S. Army Ronald Reagan Ballistic Missile Defense Test Site (RTS) in the Kwajalein Atoll, managed by the U.S. Army Space and Missile Defense Command. Two demonstration flights are proposed and the release of spent booster(s) is expected to be into the Broad Ocean Area at RTS.

While this project would consist of just two demonstration flights, many more are occurring by other Department of Defense agencies, also utilizing the U.S. Army Kwajalein Atoll/RTS impact areas. This is confirmed by the long list of reasonably foreseeable future actions identified in Table 4-2 of the subject DEA. The EPA has concerns regarding the piecemeal documentation for these projects which is resulting in insufficient evaluation of cumulative impacts at Kwajalein Atoll. We have repeatedly recommended a programmatic NEPA document be prepared, coordinated through the U.S. Army Space and Missile Defense Command, which could be utilized and tiered from for all flight test projects utilizing the RTS. We understand the U.S. Army Space and Missile Defense Command and National Marine Fisheries Service are working towards developing and implementing a programmatic consultation approach, which would streamline the consultation process and address cumulative impacts to marine biological resources. We fully support this approach and continue to recommend a parallel programmatic NEPA approach to properly address cumulative impacts on other resource areas from flight test actions and to streamline and simplify the environmental review process for agencies and the Republic of the Marshall Islands. The EPA is available to work with the DoD on this NEPA effort.

Please see our additional comments in the attached completed comment matrix that was the requested comment format by the USASMDC. The EPA appreciates the opportunity to review this Preliminary

Final Environmental Assessment. When the Final Environmental Assessment is released for public review, please send one electronic copy to Karen Vitulano, the lead reviewer for this project, at [redacted]. If you have any questions, please contact me at [redacted] or Karen at [redacted].

Sincerely,

JEAN PRIJATEL

Digitally signed by JEAN PRIJATEL
Date: 2022.08.09 15:10:01 -07'00'

Jean Prijatel
Manager, Environmental Review Branch

Enclosure: Completed Comment Matrix

cc: David Hasley, U.S. Army Space and Missile Defense Command
Steve Kolinski, National Marine Fisheries Service

Email Communication with USFWS, Pacific Islands Fish and Wildlife Office

From:	Fuller, David G CIV USARMY SMDC (USA)
To:	Dan Polhemus
Cc:	Karen Hoksbergen - KFS
Subject:	Fw: Need assistance: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI
Date:	Tuesday, July 12, 2022 11:44:25 AM

Dan,

I asked our project biologist and author of the BA to help clarify the question of a DEP.
I am sending you her response directly.

V/r,
David

David Fuller
NEPA Program Manager
Environmental Division/NEPA Branch
U.S. Army Space & Missile Defense Command
Redstone Arsenal, AL
[redacted]

From: Karen Hoksbergen - KFS [redacted]
Sent: Tuesday, July 12, 2022 9:35 AM
To: Fuller, David G CIV USARMY SMDC (USA) [redacted]; Karen Barnes - KFS [redacted]
Cc: Jonathan JF. Frazier - KFS [redacted]
Subject: [URL Verdict: Unknown][Non-DoD Source] Re: Need assistance: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

David,

Regarding the launch site at Wake, since the Wake Atoll National Wildlife Refuge included only submerged lands and waters surrounding Wake Atoll within US territorial seas and no launch vehicle components or other debris would enter these waters, no impacts to the NWR are expected for the proposed tests.

No DEP has been prepared for the Proposed Action as no requirement for completion of a DEP or NPA has been identified in the UES (16th edition). Based on Section 2-17.3.1 of the UES (Activities and Findings Requiring a DEP), we have determined that none of the activities listed in this section would occur for the Proposed Action. Regarding Section 2-17.3.1(j), a biological opinion was not rendered for the Action. An informal consultation with NMFS was conducted and NMFS concurred that UES-listed marine species may be but are not likely to be adversely affected by proposed activities. No activities have been identified that would have a significant effect on wildlife species or habitats or involve intentional migratory bird takings as defined in the UES (Section 2-17.3.1(k)). No activities have been identified that may affect significant cultural resources as defined in the UES (Section 2-17.3.1(u)). Also, upon examination of the procedures for consultation (Figure 3-4.5, page 211) and coordination (Figure 3-4.6, page213) on wildlife resources in the UES, no DEP would be required based on conclusions drawn during preparation of the subject EA/OEA and on consultation with NMFS. As you know, we are in the UES Appropriate Agencies review phase of the coordination process but our conclusions about no DEP being required are based on the expected results of coordination based on our analysis/review of the Proposed Action.

Thank you.

Karen

From: Polhemus, Dan [redacted]
Sent: Monday, July 11, 2022 7:43 AM
To: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Cc: Kropidlowski, Stefan [redacted]; McCarthy, Nadiera [redacted]; Raynal, Jeremy M [redacted]
Subject: [Non-DoD Source] Re: Need assistance: NOA: U.S. Space Force – Space Systems Command Flight Tests Preliminary Final EA / OEA & Draft FONSI

David -

I am back from my summer annual leave, and coming up to speed on various work matters.

In regard to the current proposed test, the launch site is at Wake, which requires the NEPA analysis you reference. I presume that USFWS Refuges will wish to comment on any potential adverse effects that may occur to trust resources within their Refuge at Wake. From our program standpoint, the potential impacts to aquatic ecosystems appear on initial assessment to be

discountable.

In relation to the proposed impact area at Kwajalein, this falls under our UES responsibilities for that facility in the RMI, and as such both a NEPA analysis and a DEP are required there. I do not recall previously reviewing either a NEPA or DEP document for any test originating at Wake. Can you refresh my recollection as to whether such documents have been previously circulated to our program, and if so, whether we provided comment? This current test appears at first glance to be different from the hypersonic weapons and MM3 test documents that we have previously reviewed.

- Dan Polhemus

Dr. Dan A. Polhemus
Pacific Islands Fish and Wildlife Office
U. S. Fish and Wildlife Service
Honolulu, HI 96850 USA

Phone: [redacted]
FAX: [redacted]
e-mail: [redacted]

From: Fuller, David G CIV USARMY SMDC (USA) [redacted]
Sent: Tuesday, September 13, 2022 1:00 PM
To: Karen Barnes - KFS [redacted]
Cc: Susan Thornton - KFS [redacted] Hasley, David C CIV USARMY SMDC (USA) [redacted]
Subject: Coordination with the Republic of the Marshall Islands

RE: Coordination with the Republic of the Marshall Islands (RMI)

Subject: United States Space Force - Space Systems Command Flight Tests Environmental Assessment/Overseas Environmental Assessment (EA/OEA) and associated Draft Finding of No Significant Impact (FONSI)

KFS Project Manager,

The United States Army Space and Missile Defense Command (USASMDC) provided the subject documents to all Appropriate Agencies for their review, including the Republic of the Marshall Islands (RMI) Environmental Protection Authority (EPA). The 30-day Public/Agency review period was from 11 July - 9 August 2022. The following actions were completed in providing RMI EPA the opportunity to review and comment on the subject documents:

- 29 June 2022 – Hard copies of the EA/OEA, Draft FONSI, and Notice of Availability (NOA) were mailed via the United States Postal Service (USPS)
- 7 July 2022 – Notice of Availability (NOA) emailed directly to the RMI EPA. The NOA provided the website location to download the EA/OEA, Draft FONSI, and blank comment form
- 22 July 2022 – Direct email of the documents to RMI EPA Manager
- 29 July 2022 – Documents provided via DoD SAFE
- 4 August 2022 – Contact made with RMI Majuro Office staff regarding review of documents

As indicated, USASMDC reached out to RMI EPA numerous times and RMI EPA did not provide comments nor a response. This is not uncommon for the RMI EPA. As there is no requirement in the Compact of Free Association that a concurrence is required from the Appropriate Agencies, the lack of comments or response can be accepted as no comments from the RMI EPA. Therefore, please proceed with the finalization of the subject documents.

Thank you,
David Fuller
NEPA Project Manager
USASMDC

David C. Hasley
Chief, Environmental Division
Deputy Chief of Staff, Engineer/DCSENG
[redacted]

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Appendix E
Responses to Comments Received

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COMMENT INCORPORATION SUMMARY

COMMENT INCORPORATOR **KFS, LLC**	COMMENT DATE **15 July 2022 to 09 August 2022**
COMMENTOR **Steve Kolinski (steve.kolinski@noaa.gov)** **Nadiera Sukhraj (Nadiera_McCarthy@fws.gov)** **Karen Vitulano (vitulano.karen@epa.gov)**	ORGANIZATION OF COMMENTOR **National Marine Fisheries Service, Pacific Islands Regional Office** **U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office** **U.S. Environmental Protection Agency, Region 9**
TITLE OF DOCUMENT **Preliminary Final USSF SSC Flight Tests Environmental Assessment/Overseas Environmental Assessment and Draft Finding of No Significant Impact (DFONSI)**	DATE OF DOCUMENT **25 May 2022 (EA/OEA)** **7 June 2022 (DFONSI)**

CONTRACTOR RESPONSE COLUMNS

ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO.	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES *(Exact wording of suggested change)*	INCORP.? *(Yes/No)*	HOW COMMENT WAS INCORPORATED *(If not incorporated, why?)*
Comments from: National Marine Fisheries Service, Pacific Islands Regional Office, Steve Kolinski								
1	General					Thank you for the opportunity to review the USSF SSC EA/OEA. I reviewed the document and do not have any substantial comments. The document has been shared with our NMFS protected resources division and if they have comments they will forward to the address provided in the initial notice.	N/A	Thank you for your review of the USSF SSC Flight Tests EA/OEA.
Comments from: U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office, Nadiera Sukhraj								
2	1-2	6	30-31	n/a	n/a	"The DAF acknowledges it shall apply NEPA to its activities under the Compact and its related 30 agreements as if the Marshall Islands were the United States". Will an additional DEP be required for the Kwajalein/RMI portion?	N/A	The USSF has not identified a UES (16th edition) requirement to complete a DEP (or NPA) for the Proposed Action. Based on Section 2-17.3.1 of the UES (Activities and Findings Requiring a DEP), the USSF determined that none of the activities listed in this section would occur for the Proposed Action. Specifically, regarding UES Section 2-17.3.1(j), a biological opinion was not rendered for the Action. An informal consultation with NMFS was conducted and NMFS concurred that UES-listed marine species may be but are not likely to be adversely affected by proposed activities. No activities have been identified that would have a significant effect on wildlife species or habitats or involve intentional migratory bird takings as defined in the UES (see UES Section 2-17.3.1(k)). No activities have been identified that may affect significant cultural resources as defined in the UES (see UES Section 2-17.3.1(u)). Also, upon examination of the procedures for consultation (see UES Figure 3-4.5, page 211) and coordination (see

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								UES Figure 3-4.6, page 213) on wildlife resources in the UES, no DEP would be required based on conclusions drawn during preparation of the subject EA/OEA and on consultation with NMFS. The USSF plans to incorporate comments and recommendations (or provide written justification for any recommendation not implemented) provided by the USFWS as part of coordination procedures as detailed in this comment table.
3	1-3	2	10-20	n/a	n/a	Is there a reason why USFWS was left out of these evaluations/discussions? The USFWS has equal natural resource authorities and management under the UES. USFWS also works with 611 CES on mission related items for Wake Atoll.	N/A	The USSF and USASMDC sent copies of the USSF SSC Flight Tests Biological Assessment and the letter to NMFS requesting consultation to the USFWS and all other UES Appropriate Agencies on February 18, 2022 (sent to Dan Polhemus, dan-polhemus@fws.gov). While the USSF determined that no consultation with the USFWS was required under the UES for activities at the RMI or under Section 7 for activities at Wake Atoll or in the BOA, the USSF welcomes the comments and recommendations provided by the USFWS under coordination procedures and presented in this comment table.
4	2-2	7	30-34			It is implied here and throughout the doc. that there will be no RV/debris terminating on land, reefs, or shallow waters. This appears to be most clearly stated only in Appendix B. Is the landing site the [redacted] site east of Gagan, as identified in previous documents associated with other flight tests (MMIII)? Very little environmental treat to Kwajalein Atoll is considered in the provided documentation. It is logical to assume that this is because there will be no flight test impacts other than at deep ocean sites. However, if this is the case it should be explicitly stated here and in other places throughout the EA for clarity. Otherwise, questions remain on whether we need to further consider potential contamination to soils and water, and impacts to birds, nesting turtles, vegetation, reef environment and other UES listed terrestrial and marine species. It is recommended to provide a general map indicating the potential landing site(s) and their distance from shore and estimated depth of water to more clearly indicate potential impacts to listed species and habitats of concern.	Yes	Correct, there would be no RV impacts or debris on land, reefs, or shallow waters as specified in Chapter 4, Environmental Consequences and more specifically for Biological Resources in Sections 3.3.1 and 4.2.3.1, Biological Resources - USAKA (pages 3-24 to 3-28 and 4-16 to 4-17). As recommended, text has been added to Sections 2.2.4 (pages 2-2 and 2-3) and 4.2.3.1 (page 4-13) explicitly stating that there would be no RV impacts or debris on land, reefs, or in shallow waters. The USSF has determined that additional maps cannot be presented in the EA/OEA.

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5	2-3	1	2-3			"…the deep-water RTS test range is approx. X distance from shore or the nearest shallow reef habitat and water depth in the expected termination area is approximately…."	Yes	Distance from the nearest shoreline or reef cannot be included in this EA/OEA; however, text has been added to Section 2.2.4 (page 2-3) to include water depth in the deep-water RTS test range.
6	2-7	2			2-1	[Re Biological Resources in right column:] Please state why impacts are not expected at Gagan. For example: "Gagan islet will only be utilized as a staging area for personnel. No test flight impacts are expected at Gagan or the nearshore coral reefs. Spill prevention measures from heavy equipment are in place."	Yes	Text added to Table 2-1 (page 2-7) including "...there would be no vegetation clearing, vehicle component impacts or debris, construction, or heavy equipment operation on Gagan Islet. All proposed activities on Gagan Islet would take place at existing facilities or in previously disturbed areas which are typically used to support RTS activities."
7	3-1	5	28-29	n/a	n/a	National Wildlife Refuges are administered by the U.S. Fish and Wildlife Service and that association should be added here.	Yes	Revised as recommended in Section 3.1 (page 3-1).
8	3-4	2	All in 3.1.1	n/a	n/a	A species does not have to be ESA listed to provide an important ecosystem function. Those are the species that are already in trouble. NEPA documents consider impacts to all flora and fauna and all habitats, not just listed ones/critical habitat	Yes	The USSF has considered all biological resources in their assessment but has focused on species and habitats with high importance or sensitivity to proposed activities and on species and habitats with special status as an action-related impact would generally have a greater consequence to the species or habitat as a whole. Sections 3.1.1 (page 3-4), 4.2.1.1 (page 4-2), 4.2.2.1 (page 4-10), and 4.2.3.1 (page 4-13) have been revised to clarify that "All biological resources in the region of influence have been considered and evaluated for potential impacts from proposed activities. Discussion of environmental consequences in this section focuses on important or sensitive biological resources with the potential to be affected by the Proposed Action. Species or habitats with low sensitivity or that would not be impacted are not discussed in detail in this section."
9	3-4	3	18-19	n/a	n/a	List is missing Fish and Wildlife Coordination Act, Clean Water Act. Evaluating trust resources, not just ESA listed	No	The USSF has determined that the Fish and Wildlife Coordination Act and Clean Water Act do not apply to the current Proposed Action. Regarding the Fish and Wildlife Coordination Act of 1934, there would be no impoundment, diversion, channel deepening, or other modification of any stream or other body of water associated with the Proposed Action. Regarding the Clean Water Act, the Proposed Action would not involve any point-source discharge of pollutants into navigable waters or other surface waters.

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10	3-5	5	35-37	n/a	n/a	Clarify that cats are no longer on the islands. If possible give a date when they were last on the atoll	No	According to the 2017 INRMP for Wake Atoll (PRSC 2017), there were still two cats remaining on Wake.
11	3-6	n/a	n/a	n/a	n/a	Figure 3-1. Is the “Nesting Areas” layer obscuring other layers underneath it? Trees and shrubs exist in the nesting areas but cannot be seen in this layout view	No	Yes, the map from MDA 2015 likely does not show all the trees and shrubs under the "nesting areas" layer. The USSF does not wish to include an aerial image of Wake Atoll in the EA/OEA; however, one can be provided to the USFWS upon request.
12	3-7	5	20-22	n/a	n/a	ESA listed corals have also been documented across the western reef flat. 611 CES has copy of report, part of Sikes Act funded project completed by USFWS	No	The preparers have requested the coral report from 611 CES. The Proposed Action would have no effect or impact on ESA-listed corals on the western reef flat as no proposed activities would occur in shallow waters or reef habitats at Wake Atoll.
13	3-9	n/a	n/a	n/a	n/a	Figure 3-2. What is the probability of the test failure en route to Gagan, and how would that effect the “conservation areas” if the items landed there?	No	Probability of test failures or mishaps are not provided for the flight tests. Test anomalies are not a planned or expected event and as such are not evaluated in the EA/OEA. In the event of a catastrophic event Range Safety Disaster Preparedness Plans would be implemented and impacts accessed.
14	3-22	2	12	n/a	n/a	“No ESA-listed invertebrates are known to occur in the region of influence”. Should mention the large population of genus Tridacna (giant clams) that has been documented in both the lagoon and reef flats around the atoll. CITES listed, found at both Wake and Kwajalein	No	This statement in Section 3.2.1 (page 3-22) applies only to the BOA region of influence. Considering Gagan Islet: While *Hippopus hippopus* and *Tridacna gigas* (and *T. maxima* a UES coordination species) have been found in shallow water off Gagan (NMFS and USFWS 2018), there would be no vehicle impacts or debris in reef or other shallow water habitats. Therefore, these giant clams were determined to not be in the ROI and were not assessed in the EA/OEA. Considering Wake Atoll: The USSF has been unable to find evidence of ESA-candidate clams offshore of Wake. The NOAA 2019 Monitoring Report for the Pacific Remote Islands MNM does cite giant clams offshore but does not specify species. Since there would be no Proposed Action activities in nearshore waters, the composition of giant clams was not detailed further, and these nearshore species would not be affected by the Action if they were present.
15	3-23		25-26			This implies only open ocean landing. Please state explicitly. See Item No. 1.	No	Text in Section 3.3.1.1 (page 3-24) states that "No Proposed Action activities are expected to take place in shallow, nearshore habitats."

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16	3-24	3.3.1.1	27-28			Please characterize the deep offshore waters (depth and distance from land/shallow reef) and the activity that will occur there (e.g., flight test equipment landing/impact).	Yes	The water depths in the area in which activities would occur have been added to Section 3.3.1.1 (page 3-24). The types of activities at Gagan and in the deep-water test range have also been added to this section.
17	3-25	3.3.1.2	1-35			Further impacts will need to be considered if there are land/shallow water impacts. It appears that this is not expected but not clearly stated in some sections as indicated above.	Yes	Clarification has been added to the EA/OEA that there would be no land or shallow water impacts. Text has been added to Sections 2.2.4 (page 2-3) and 4.2.3.1 (page 4-13) explicitly stating that there would be no RV impacts or debris on land, reefs, or in shallow waters. Text has also been added to Section 3.3.1.1 (page 3-24 to 3-25) to provide additional information about the region of influence.
18	4-2	5	35			The endangered Central West Pacific DPS green sea turtle has been observed basking or hauled out on Wake Island (Page 3-7). We recommend the following measures to avoid and minimize impacts: • No vehicle use on or modification of the beach/dune environment during the sea turtle nesting or hatching season. • Do not remove native dune vegetation. • Incorporate applicable best management practices regarding Work in Aquatic Environments • Have a biologist familiar with sea turtles conduct a visual survey of the project site to ensure no basking sea turtles are present. o If a basking sea turtle is found within the project area, cease all mechanical or construction activities within 100 feet until the animal voluntarily leaves the area. o Cease all activities between the basking turtle and the ocean. • Remove any project-related debris, trash, or equipment from the beach or dune if not actively being used. • Do not stockpile project-related materials in the intertidal zone, reef flats, sandy beach and adjacent vegetated areas, or stream channels.	Yes	The USSF has included the following USFWS recommendations in Section 4.2.1.1 (page 4-5): • Proposed activities would involve no vehicle use on or modification of the beach/dune environment. • No native dune vegetation would be removed as part of the Proposed Action. • Any project-related debris, trash, or equipment would be removed from Wake Atoll. • No project-related materials would be stockpiled in the intertidal zone, reef flats, sandy beach and adjacent vegetated areas, or stream channels. • Project personnel would not approach within 100 feet of basking sea turtles. The following measures were not included in the EA/OEA (justification of non-inclusion provided for each): • Incorporate applicable best management practices regarding Work in Aquatic Environments (The Proposed Action would not involve any Work in Aquatic Environments at Wake Atoll.) • Have a biologist familiar with sea turtles conduct a visual survey of the project site to ensure no basking sea turtles are present. (The Proposed Action would not involve any project activities in beach habitats and the closest activities would occur at least 200 feet from the beach; therefore, a survey would not be necessary.) o If a basking sea turtle is found within the project area, cease all mechanical or construction

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								activities within 100 feet until the animal voluntarily leaves the area. ○ Cease all activities between the basking turtle and the ocean.
19	4-2	5	35			Lighting associated with pre-launch activities could adversely affect nesting sea turtles or hatchlings. To avoid and minimize project impacts to nesting or hatchling sea turtles from lighting we recommend incorporating the following applicable measures into your project: • Avoid nighttime work during the nesting and hatching season. • Minimize the use of lighting on or near beaches and shield all project-related lights so the light is not visible from any beach. ○ If lights can't be fully shielded or if headlights must be used, fully enclose the light source with light filtering tape or filters. • Incorporate design measures into the construction or operation of buildings adjacent to the beach to reduce ambient outdoor lighting such as: ○ tinting or using automatic window shades for exterior windows that face the beach; ○ reducing the height of exterior lighting to below 3 feet and pointed downward or away from the beach; and ○ minimize light intensity to the lowest level feasible and, when possible, include timers and motion sensors.	Yes	The USSF has included the following USFWS recommendations to avoid potential lighting-associated impacts on sea turtles in Section 4.2.1.1 (page 4-5): • Avoid nighttime work during the sea turtle nesting and hatching season (May through November) when possible. • Minimize the use of lighting on or near beaches and shield project-related lights so the light is not visible from any beach. ○ If lights can't be fully shielded or if headlights must be used, fully enclose the light source with light filtering tape or filters when possible. • Incorporate measures into the operation of facilities adjacent to the beach to reduce ambient outdoor lighting such as: ○ turning lights off when not in use; ○ minimize light intensity to the lowest level feasible and, when possible, include timers and motion sensors; and ○ where feasible, reducing the height of exterior lighting to below 3 feet and pointed downward or away from the beach.
20	4-3	1	1			Please include any potential impacts to the endangered Central West Pacific DPS green sea turtle has been observed basking or hauled out on Wake Island as a result of launch activities.	Yes	Revised Section 4.2.1.1 (page 4-3) to explicitly include potential impacts to green sea turtles. The USSF concludes that hauled out Central West Pacific DPS green sea turtles would not be affected by the Proposed Action.
21	4-4	3	10			Additional efforts may be required for aquatic biosecurity with ships/barges coming into the atoll to prevent aquatic invasions. Please coordinate with the USAF 611 CES Biosecurity Manager.	No	The USSF has coordinated with 611 CES on biosecurity requirements at Wake Atoll and included those requirements in the Avoidance and Minimization Measures in Section 4.2.1.1 (page 4-4).
22	4-11	2	26			Green sea turtles have recently been observed nesting on Kwajalein Island. Lighting associated with pre-launch activities could adversely affect nesting sea turtles or hatchlings.	No	No specific Proposed Action activities would occur at Kwajalein Island. Any activities that occur at Kwajalein Island in conjunction with the flight tests would be a part of ongoing USAG-KA and RTS operations to support range activities. As such, the

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						To avoid and minimize project impacts to nesting or hatchling sea turtles from lighting we recommend incorporating the following applicable measures into your project:
						
						• Avoid nighttime work during the nesting and hatching season (May to December).
						• Minimize the use of lighting on or near beaches and shield all project-related lights so the light is not visible from any beach.
						  ○ If lights can't be fully shielded or if headlights must be used, fully enclose the light source with light filtering tape or filters.
						• Incorporate design measures into the construction or operation of buildings adjacent to the beach to reduce ambient outdoor lighting such as:
						  ○ tinting or using automatic window shades for exterior windows that face the beach;
						  ○ reducing the height of exterior lighting to below 3 feet and pointed downward or away from the beach; and
						  ○ minimize light intensity to the lowest level feasible and, when possible, include timers and motion sensors.
								effects of those activities are not included in this EA/OEA. The USSF has determined that the suggested avoidance and minimization recommendations are outside the scope of the Proposed Action, and they are not included in the EA/OEA.

23	Overall Comment					NEPA assessments are not restricted to ESA species and critical habitat only. The writer(s) only seemed to focus on those while not mentioning the other resources and habitats that occur in these places	Yes	The USSF has considered all biological resources in their assessment but has focused on species and habitats with high importance or sensitivity to proposed activities and on species and habitats with special status as an action-related impact would generally have a greater consequence to the species or habitat as a whole. Sections 3.1.1 (page 3-4), 4.2.1.1 (page 4-2), 4.2.2.1 (page 4-10), and 4.2.3.1 (page 4-13) have been revised to clarify that "All biological resources in the region of influence have been considered and evaluated for potential impacts from proposed activities. Discussion of environmental consequences in this section focuses on important or sensitive biological resources with the potential to be affected by the Proposed Action. Species or habitats with low sensitivity or that would not be impacted are not discussed in detail in this section."

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Comments from: U.S. Environmental Protection Agency, Region 9, Karen Vitulano								
24	General					While this project would consist of just two demonstration flights, many more are occurring by other Department of Defense agencies, also utilizing the U.S. Army Kwajalein Atoll/RTS impact areas. This is confirmed by the long list of reasonably foreseeable future actions identified in Table 4-2 of the subject DEA. The EPA has concerns regarding the piecemeal documentation for these projects which is resulting in insufficient evaluation of cumulative impacts at Kwajalein Atoll. We have repeatedly recommended a programmatic NEPA document be prepared, coordinated through the U.S. Army Space and Missile Defense Command, which could be utilized and tiered from for all flight test projects utilizing the RTS. We understand the U.S. Army Space and Missile Defense Command and National Marine Fisheries Service are working towards developing and implementing a programmatic consultation approach, which would streamline the consultation process and address cumulative impacts to marine biological resources. We fully support this approach and continue to recommend a parallel programmatic NEPA approach to properly address cumulative impacts on other resource areas from flight test actions and to streamline and simplify the environmental review process for agencies and the Republic of the Marshall Islands. The EPA is available to work with the DoD on this NEPA effort.	N/A	USASMDC and NMFS are working towards developing and implementing a programmatic consultation approach that would batch multiple RTS tests over a period of time with similar impact areas. The Programmatic Biological Assessment (PBA) for mission activities at USAKA will evaluate effects cumulatively resulting in satisfactory avoidance and minimization of risks of protected species. Concurrently, USAG-KA is evaluating the development of a programmatic consultation approach for routine Garrison activities to include marine transportation associated with RTS tests. Regarding a programmatic NEPA/DEP, USAG-KA and USASMDC are currently in discussions regarding the appropriate environmental compliance documents necessary for ongoing activities.
25	3-16		27			States, “The fire suppression system is not operational. “ Please indicate what methods would be used in the event of a fire.	No	Document states, “the fire station is continually staffed in the event of an emergency." It is anticipated that the staff at the fire station will respond to all emergencies.
26	3-18		4-6, 27			Appears high noise levels would extend beyond Launch Hazard Area. Recommend communicating with non-personnel “spectators” about noise impacts so they can protect themselves	Yes	Sentences in Section 3.1.5 (page 3-18) updated to read, "... spectators are evacuated beyond the Launch Hazard Area, where they do not require hearing protection."
27	3-28		9			References data from 2007 which is too old to reference for climate impacts. Include more updated climate information in this section. This report titled “The Impact of Sea-Level Rise and Climate Change on Department of Defense Installations on Atolls in the Pacific Ocean” may be useful - https://apps.dtic.mil/sti/citations/AD1053105	Yes	Thank you for providing the information about the DOD report. Additional information on climate and climate change based on more recent data has been added to Section 3.3.2 (page 3-28).

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28	3-28		11-13			According to NOAA, from May 2021 to April 2022, Kwajalein Island broke its record for high tide flooding events with 4 flooding events. See https://tidesandcurrents.noaa.gov/HighTideFlooding_AnnualOutlook.html. Suggest adding this and other updated information to Section 3.3.2	Yes	Thank you for providing additional information about flooding events. Recommended information has been added to Section 3.3.2 (page 3-28).
29	4-1		18-29			References previous EA's but not any monitoring of effects from these previous actions. The benefit of repeating projects in the same location is that you have actual data about impacts from the event and don't need to rely on previous predictions. We recommend including results from previous launches in the EA. If no monitoring was conducted, it is important to include monitoring and recording of impacts for these actions to inform future assessments. Include impact and mitigation monitoring and reporting requirements for this action.	No	The USSF is not aware of any mitigation monitoring and reporting requirements for these referenced EAs.
30	4-2		6-7			Same comment as above – EA says analyses from previous EAs are incorporated by reference; should incorporate after-action results. Incorporate results from these actions in the Final EA, especially for biological resources which more likely had a monitoring component with respect to consultations. Identify what monitoring is associated with consultations for this EA and where that information would be located.	No	The USSF is not aware of any after-action monitoring results for the referenced programs. The action in MDA 2015 required migratory bird monitoring but only for ground disturbing activities and vegetation clearing, not for launch activities; therefore, those results would not apply to the current Proposed Action. No biological monitoring is required under consultation with NMFS for the current Proposed Action (see Appendix A).
31	4-3		17			"If launch activities occur during the nesting season" – suggest including mitigation to avoid if practicable.	No	The USSF concludes that since "Elevated noise levels due to launch would last on the order of seconds and birds are expected to return to normal behaviors and locations within minutes or hours of launch", potential impacts are negligible to minor short term and that no mitigation measures are necessary for the Proposed Action.
32	4-6		1			Says all hazardous waste would be disposed in accordance with applicable regulations. Due to the remote location of the site, recommend a brief description of how such waste is managed. Is it transported to HI or another location?	Yes	Text added to Section 4.2.1.3 (page 4-7) states, "All hazardous waste is moved from the satellite accumulation sites to a main hazardous waste accumulation site to await transportation off-site via barge."
33	4-6		15-17			States that the current wastewater system is expected to be adequate to support the temporary increase in personnel during the implementation of the Proposed Action. Very little information is provided on the wastewater system on p. 3-17. Recommend FEA identify the compliance status with	Yes	Updated Section 4.2.1.4 (page 4-7) to acknowledge the NPDES Permit #MW0020338. The DAF owns and operates Wake Island; therefore, the Wake Island Federal Facilities Compliance Agreement

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						the Wake Island Federal Facilities Compliance Agreement, between the U.S. Environmental Protection Agency, Region 9, and the U.S Army Space and Missile Defense Command.		between USEPA and USASMDC is no longer in effect.
34	4-15		20-21			States, "The test flights do not originate from an RTS launch site or range; therefore, emissions release during flight test are not anticipated to impact climate characteristics at RMI" GHG emissions are global in nature and collectively affect all locations – please correct statement and include documented increases in high tide flooding and sea level rise in this section as potential effects at RMI.	Yes	Section 4.2.3.2 (page 4-17) updated to acknowledge trends in the RMI are consistent with global patterns.
35	4-17		18		Table 4-2	Table identifies the many projects utilizing USAG- KA. EPA has commented several times on the projects utilizing RMI as a target location recommending a programmatic NEPA analysis to capture the impacts from multiple projects and to streamline assessment for individual projects, which could be tiered to it. We continue to recommend this. See also cover letter.	No	USASMDC and NMFS are working towards developing and implementing a programmatic consultation approach that would batch multiple RTS tests over a period of time with similar impact areas. Concurrently, USAG-KA is evaluating the development of a programmatic consultation approach for routine Garrison activities to include marine transportation associated with RTS tests. Regarding a programmatic NEPA/DEP, USAG-KA and USASMDC are currently in discussions regarding the appropriate environmental compliance documents necessary for ongoing activities.

Appendix F
Examples of Hazardous Chemicals and Materials for the Launch from Wake Island

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PN	U/M	Qty	Name	Notes	49 CFR	IATA	HAZDIP	Hazardous Class	Proper Shipping Name	UN	PG	Program Buy	Common Stock	When to ship	How long do we need to last	EXP Date	Net Quantity/Mass	Limited Quantity up to amount in AFMAN (Y)es / (N)o	Tools Needed	SDS
MIL-H-83282C	**GAL**	**5**	**Hydraulic Fluid**	**Brought by program. Max of 15 GAL including volume in cart.**	**N**	**N**														
RF 2314-1	GAL	1	ADHESIVE EPOXY, RF-4000 RESIN, RF-66 HARDENER, GALLON KIT	2 part kit - A not regulated	N	N														Y
RF 2314-1	GAL	1	ADHESIVE EPOXY, RF-4000 RESIN, RF-66 HARDENER, GALLON KIT	2 part kit - B is regulated	Y	Y	X	8	Tetraethylenepentamine Mixture	2320	III									Y
RTV 511	12 lbs = 1 bucket	1	ADHESIVE SEALANT, SILICONE		N	N														Y
RTV 60	KIT	2	POTTING-ENCAPSUL COMPOUND SILICONE 2-PART RED POURABLE	2 part kit - A & B are not regulated	N	N														Y
RTV 106	2.8 oz	5	ADHESIVE SEALANT, SILICONE, 1-PART RED PASTE 2.8 FL OZ TUB		N	N														Y
RTV 159	2.8 oz	5	ADHESIVE-SEALANT SILICONE ONE-PART RED-PASTE, 2.8 FL OZ		N	N														Y
RTV 577	12 lbs = 1 bucket	2	ADHESIVE, SILICONE, 2-PART	2 part kit - A is regulated	Y	Y	X	9	Environmentally hazardous substance, liquid, n.o.s. (zinc oxide)	3082	III									Y
RTV 577	little tube	2	ADHESIVE, SILICONE, 2-PART	2 part kit - B is regulated	Y	Y	X	9	Environmentally hazardous substance, liquid, n.o.s. (zinc oxide)	3082	III									Y
DBT	.25 LB JAR	2	ACTIVATOR .25LB	DBT is regulated BUT STO IS NOT	Y	Y	X	8	Corrosive Liquids, n.o.s. (Dibutyltin Dilaurate)	1760	III									Y
PR100	1 OZ	1	ADHESIVE, CYANOACRYLATE, RITE-LOK, 1 OZ	Not EC100	N	N														Y
24231	50 ML	2	ADHESIVE, THREADLOCKER, ASTM D5363, 50 ML (LOCTITE 242)	Also a 10 mL option: 24221, 250 mL option: 24241	Y	Y	X	9	Environmentally hazardous substance, liquid, n.o.s. (alpha,alpha-Dimethylbenzylhydroperoxide)	3082	III									Y
AW 5540/HW 5541	CARTRIDGE	5	ADHESIVE/HARDENER DS-200 CARTRIDGE		N	N														Y
RTV 162	2.8 OZ	2	ADHESIVE-SEALANT SILICONE 1-PART WHITE PASTE 2.8 OZ		N	N														Y
AREMCO-BOND 805	PINT	1	ADHESIVE-THERMAL	Part A and Part B both no regulated	N	N														Y
ALODINE 1201	QT	1	COATING, CHEMICAL CONVERSION		Y	Y	X	9	Environmentally hazardous substance, liquid, n.o.s. (Chromic Acid)	3082	III									Y
EA 9394	QT	2	EPOXY ADHESIVE, QT	2 part kit - A is regulated	Y	Y	X	9	Environmentally hazardous substance, liquid, n.o.s, (Tetragiycidyl'diaminodiphenylmethane, Bisphenol-A Epichlorohydrin resin)	3082	III									Y
EA 9394	QT	2	EPOXY ADHESIVE, QT	2 part kit - B is regulated	Y	Y	X	8	Amines, solid, corrosive, n.o.s. (Tetraethylene pentamine, Substituted piperazine)	3259	III									Y
021137	QT	2	EPOXY, 2-PART KIT, NO CORK QT	2 part kit - A is regulated	Y	Y	X	9	Environmentally hazardous substance, liquid, n.o.s. (Bisphenol-A Epichlorohydrin resin)	3082	III									Y
021137	QT	2	EPOXY, 2-PART KIT, NO CORK QT	2 part kit - B is regulated	N	Y	X	9	Environmentally hazardous substance, liquid, n.o.s. (dimer fatty acid(C18)poly amido amine resin)	3082	III									Y
TRIBOLUBE-15	2-OZ TUBE	2	LUBRICANT GREASE O-RING (2 OZ TUBE)		N	N														Y
TRIBOLUBE-16	2-OZ TUBE	2	LUBRICANT GREASE O-RING (2-OZ TUBE)		N	N														Y
K4096-SDSC 63X-1	GAL	1	PAINT, CONDUCTIVE, STATIC DISSIPATIVE, 1 GALLON		N	N														Y
M23377-1-N-004P	4-PINT?	2	PRIMER COATING, EPOXY, NON-CHROMIUM, 4-PINT KIT	M23377-1-N004Q - for QT	Y	Y	X	3	Paint	1263	III									Y
7701	1/2 pint	1	PRIMER, ADHESION PROMOTER, CHEMLOK, 1/2 PINT		Y	Y	X	3	Adhesives	1133	II									Y
SS4004P	PINT	1	PRIMER-SILICONE, PT		Y	Y	X	3	Flammable Liquid, n.o.s. (Acetone, Isopropanol)	1993	II									Y
EC-3901	8 oz	1	PRIMER-STRUCTURAL ADHESIVE, 8 OZ		Y	Y	X	3, (6.1)	METHANOL	1230	II									Y
1367K11	8 oz	4	ANTI-SIEZE LUBRICANT, 8 oz brush top can		N	N														Y
1380K22	8 oz	2	GREASE-LITHIUM NLGI 2-1/2 US2		N	N														Y
7090T37	QT	6	SPRAY ANTI-STATIC 1-QT BOTTLE		N	N														Y
IPA 2	GAL	8	ALCOHOL - ISOPROPYL		Y	Y		3	Isopropanol	1219	II									Y
618796	GAL	2	ACETONE		Y	Y		3	Acetone	1090	II									Y
MS-SNOOP-8OZ	8 oz	2	LEAK-DET-FLUID 8OZ BOTTLE		N	N														Y
WD-40 10008	8 oz	2	LUBRICANT, SPRAY, 8 OZ CAN		Y	Y		2.1	Aerosols	1950										Y
93-104	GAL	2	Ablative, silicone, 2- part	Catalyst - Part A is regulated	Y	N		9	Environmentally hazardous substance, liquid, n.o.s. (Xylene)	3082	III									Y
93-104	GAL	2	Ablative, silicone, 2- part	Base - Part B is not regulated	N	N														Y
3-6559	GAL	2	Cure Accelerator		N	N														Y
3-6060	GAL	1	Primer		Y	Y		3	Methyl Isobutyl Ketone Solution	1245	II									Y
GPL 206	2 oz	1	KRYTOX GPL-206 PFPE GREASE 2-OZ		N	N														Y
77124	8 oz	2	NICKEL ANTI-SEIZE, 8 OZ BRUSH TOP CAN		N	N														Y
P/S 870 B-2	PINT	1	SEALANT, POLYSULFIDE, CORROSION INHIBITING	2 part kit - A not regulated	N	N														Y
P/S 870 B-2	PINT	1	SEALANT, POLYSULFIDE, CORROSION INHIBITING	2 part kit - B is regulated	N	Y		9	Environmentally hazardous substance, solid, n.o.s. (thiram (ISO))	3077	III									Y
14250	1 OZ	5	EPOXY 5-MINUTE, 1 OZ		N	N														Y
27131	50 ML	1	ADHESIVE, THREADLOCKER, ASTM D5363, 50 ML (LOCTITE 271)		Y	Y		9	Environmentally hazardous substance, liquid, n.o.s. (alpha,alpha-Dimethylbenzylhydroperoxide)	3082	III									Y
5606 white	2 part-400 ML	25	SILICONE, WHITE, 2 PART 400ML CARTRIDGE	2 PART KIT BOTH NOT REGULATED	N	N														y
19-8475-12oz	12 oz	2	Canned - Air		Y	Y		2.2	Tetrafluoroethane	3159										Y
EN93	EA	12	Battery-C		N	N														Y
EN22	EA	12	Battery 9-VOLT Energizer Eveready		N	N														Y
EN91	EA	24	Battery, AA		N	N														Y
EN92	EA	24	Battery 1.5VOLT AAA Energizer eveready		N	N														Y
10446	QT	2	REZTORE SURFACE & MAT CLEANER, 1 QT SPRAY		N	N														Y

Legend:

Kits
Regulated
No Air Transport
No SDS