

EXECUTIVE SUMMARY

Introduction

The Strategic Targets Product Office (STPO) within the Ballistic Missile Targets Joint Project Office of the U.S. Army Space and Missile Defense Command is responsible for providing the target launch system for various Risk Reduction Flight and Integrated Flight Test programs. The STPO would provide the Strategic Target System launch vehicle for strategic target launch services from Kodiak Launch Complex licensed by the Federal Aviation Administration for commercial rocket launches located on Kodiak Island, Alaska and operated by the Alaska Aerospace Development Corporation (AADC).

The Strategic Target System target would also continue to be launched from Kauai Test Facility at the Pacific Missile Range Facility (PMRF), Kauai, Hawaii to the broad ocean area near the U.S. Army Kwajalein Atoll/Kwajalein Missile Range (USAKA/KMR) in the Marshall Islands.

The STPO, supporting the Ballistic Missile Defense Organization, proposes to increase the launch capability of the Strategic Target System by adding a new Strategic Target System flight trajectory from Kauai Test Facility and, as a fee-paying customer, providing a launch capability from Kodiak Launch Complex. The Proposed Action is to provide ballistic missile targets to test North American sensors, and for possible use in testing various sensors and ground-based interceptors at USAKA/KMR and various sensors and ship-based interceptors at PMRF.

The primary components of the Strategic Target System vehicle are the first and second stage Polaris boosters, the third stage Orbus booster, and the development payloads. The remainder of the system consists of ground support equipment.

The Polaris and Orbus-1 boosters are currently stored at Redstone Arsenal, Alabama. Within 1 year before launch, the first and second stage boosters and parts would be x-rayed in radiographic facilities and would be certified for flight for 1 year with a 6-month extension. The third stage Orbus-1 boosters are certified for 5 years as a result of refurbishment by the manufacturer in 2001. Both Polaris A3P and newer Polaris A3R motors would be used in the first and second stage Polaris boosters. The A3R motors would have the same propellants and emission characteristics as the earlier A3P motors. The A3R motors are of a much later manufacture and have a thicker layer of insulation in the aft end of the casing, and an overhauled nozzle assembly. Otherwise, the motors are identical.

Test Program Activities

Up to four Strategic Target System launches per year are anticipated over a minimum of 5 years and into the reasonably foreseeable future at Kodiak Launch Complex. The Strategic Target System activities at Kodiak Launch Complex would consist of assembly

and integration testing, flight preparation, launch/flight operations, data collection, and data analysis. At Kodiak Launch Complex, assembly and integration testing activities would take place at the Integration and Processing Facility as described in the Kodiak Launch Complex EA. Up to 65 personnel would be working and living in the area during missile buildup activities, which would last 35 to 40 days. The Strategic Target System boosters would be processed and prepared for launch in the same manner as previous flights from Kauai Test Facility.

Flight preparations at Kodiak Launch Complex would include booster flight preparation, payload flight preparation, and flight communications preparation. The Strategic Target System boosters would be transported to Kodiak Island using military aircraft. Use of the Kodiak joint tenant airport shared by commercial pilots and the Alaska Coast Guard would be required. After arrival by military aircraft, the boosters and payload would be transported using established and permitted transportation routes to the Integration and Processing Facility on Kodiak Launch Complex.

To ensure public safety, before each launch at Kodiak Launch Complex, Naval Air Warfare Center Weapons Division would define a safety exclusion zone and the Ground Hazard Area (GHA). The proposed launches at Kodiak Launch Complex would utilize launch azimuths included in those analyzed in the Kodiak Launch Complex EA. A comprehensive safety analysis would be made for each mission to determine specific launch hazards and to meet safety criteria.

Up to four Strategic Target System missiles per year would continue to be launched from Kauai Test Facility. No new missile launch azimuths would be required for the Proposed Action. The assembly and integration testing of the first- and second-stage Polaris boosters and the third-stage Orbus-1 booster would occur at Kauai Test Facility for the continuation of Strategic Target System launches. Flight preparation would involve all activities required to assemble the major Strategic Target System components before flight.

The Strategic Target System boosters would be transported to Kauai Test Facility using military aircraft. After arrival, the boosters would be transported along existing safety routes to the missile assembly building on Kauai Test Facility. The current restrictive easement would be used to set up the launch hazard area to ensure public safety during launch. To ensure public safety during launches at Kauai Test Facility, a GHA, a launch hazard area, and a flight termination line would be established.

Methodology

To assess the significance of any impact, a list of activities necessary to accomplish the Proposed Action was developed. The affected environment at all applicable locations was then described. Next, those activities with the potential for significant environmental consequences were identified. If a proposed activity was determined to have a potential for causing significant environmental impact, it was analyzed in greater detail in terms of intensity, extent, and context in which significant impacts would occur. The significance

criteria used to evaluate the environmental effects of program activities include three levels of impacts: no impacts, no significant impact, and significant impact.

Fourteen broad environmental components were originally considered to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the severity of potential impacts. These areas of environmental consideration were air quality, airspace, biological resources, cultural resources, environmental justice, geology and soils, hazardous materials and waste, health and safety, infrastructure, land use, noise, socioeconomics, visual and aesthetics resources, and water resources.

No ground-disturbing activities are planned as part of the Proposed Action, and no new impacts to cultural resources, geology and soils, or water resources are anticipated that are not already covered under existing environmental documentation. No adverse impacts to minority or low-income communities (Executive Order 12898, *Environmental Justice*) are expected at either location. No environmental health and safety risks were identified that may disproportionately affect children, in compliance with Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*. The development and use of the Kodiak Launch Complex underwent a review for consistency with Alaska Coastal Management Program standards and was issued a final consistency determination on 19 January 1996. Existing infrastructure would be used, and no change is anticipated to current land use or to the visual and aesthetics environment of the proposed locations.

No changes are expected to air quality or the use and generation of hazardous materials and waste at PMRF as a result of proposed activities.

Results

This section summarizes the conclusions of the analyses made for each of the seven remaining areas of environmental consideration based on the application of the described methodology. Within each resource summary, only those activities for which a potential environmental concern was determined are described.

Air Quality

The overall impact on the ambient air at Kodiak Launch Complex is expected to be minimal. Current applicable operating permits at Kodiak Launch Complex would cover stationary sources of pollution such as generators. Air quality impacts from the generators would be temporary and negligible offsite. Since the program would not require an increase in the number of cars on the island, the program-related traffic emissions are not anticipated to have a noticeable impact on air quality. The pollutants of greatest concern are hydrogen chloride and aluminum oxide from the proposed missile launches. The ambient air quality impacts due to hydrochloric acid and aluminum oxide exhaust from the Strategic Target System vehicle have been examined by several air quality modeling programs, and results indicate no significant impact to air quality at Kodiak Launch Complex and Kodiak.

Airspace

Before launching the target missile from Kodiak Launch Complex, Notices to Airmen would be sent in accordance with the conditions of the directive specified in Army and Federal Aviation Administration regulations. Provision would be made for surveillance of the affected airspace. In addition, safety regulations dictate that launch operations would be suspended when it is known or suspected that any unauthorized aircraft have entered any part of the surface danger zone until the unauthorized entrant has been removed or a thorough check of the suspected area has been performed. No impact to airspace in the vicinity of Kodiak Launch Complex is anticipated.

Proposed missile launches from Kauai Test Facility would have no impact on the controlled and uncontrolled airspace in the PMRF/Main Base region of influence. All other local flight activities would occur at sufficient distance and altitude that the target missile launches would have no effect. With all arriving and departing aircraft, and all participating military aircraft under the control of PMRF Radar Control Facility, there would be no airfield or airport conflicts in the region of influence under the Proposed Action, and thus no impact.

Biological Resources

No new construction or other ground-disturbing activities that could remove or impact vegetation are anticipated. Standard Operating Procedures for spill prevention, containment, and control measures while transporting equipment and materials would preclude impacts to biological resources. Since vegetation is normally cleared from areas adjacent to the launch site and the duration of high temperatures would be less than 3 seconds, no long-term adverse effects on vegetation are anticipated. Also observation of plant communities at other launch sites such as the Kauai Test Facility, Cape Canaveral, and Vandenberg AFB indicate that vegetation continues to thrive in the immediate areas surrounding launch pads.

There has been no evidence of any long-term adverse effect on vegetation from two decades of launches at PMRF. The continued presence of theadder's tongue, a species recently removed from the list of Federal Candidate species, indicates that emissions from Strategic Target System missiles have not had a significant impact on sensitive vegetative species. Based on these analyses, the potential effects to vegetation on PMRF from the Proposed Action are expected to be minimal.

Informal observation at several launch facilities indicates the increased presence of personnel immediately before a launch tends to cause birds and other mobile species of wildlife to temporarily leave the area that would be subject to the highest level of launch noise. Therefore, no direct physical auditory changes are anticipated. Launches would be infrequent, and the brief disturbance to wildlife is not expected to have a lasting impact. Wildlife such as waterfowl would quickly resume feeding and other normal behavior patterns after a launch is completed. Strategic Target System launches from Kodiak Launch Complex would have no impact on breeding or the nesting success of the Steller's eider or short-tailed albatross.

The closest Steller sea lion haulout sites are approximately 5 kilometers (3 miles) southeast on Ugak Island and 16 kilometers (10 miles) southwest of the Kodiak Launch Complex. To date no Steller sea lion rookeries have been identified within the area that could potentially be affected by proposed activities. Studies have indicated that launches are likely to produce some level of alarm response in the sea lions using Ugak Island. However, using the noise levels modeled for the Strategic Target System launches at PMRF, the maximum noise levels at the haulout sites on Ugak Island would be approximately 81 A-weighted decibels (dBA), the equivalent of a bus at the curbside of a busy street. It is possible that actual sound levels at the haulouts could be slightly higher than those indicated by modeling. Even though no substantial effects to Steller sea lions from past missile launches have been noted, the program will continue to adhere to the consultation monitoring agreement between AADC and the National Marine Fisheries Service, and the effects of actual Strategic Target System launches will be monitored and evaluated in accordance with their direction. No evidence has indicated that serious injuries would result, and no long-term adverse effects are anticipated.

The noise level thresholds of impact to marine life in general, and marine mammals in particular, are currently the subject of scientific analysis. There is the possibility that underwater noise levels resulting from missile reentry sonic booms could affect some marine mammals or sea turtles in the open ocean. However, since different species of marine mammals have varying sensitivity to different sound frequencies and may be found at different locations and depths in the ocean, it is difficult to generalize sound impacts to marine mammals from missile impacts in the broad ocean area. Patrol and surveillance aircraft are dispatched before launch at Kauai Test Facility to search the probable first stage impact water surface. If contacts are made and confirmed, the Flight Safety officer would determine whether to continue on schedule, delay the test flight, or postpone it until another day.

Studies on representative birds and mammals have indicated that low-level, short-term exposure to hydrogen chloride would not adversely affect threatened or endangered species or other wildlife. Aluminum oxide and hydrogen chloride do not bioaccumulate; therefore, no indirect effects to the food chain are anticipated.

Debris impact and booster drops in the broad ocean area are not expected to adversely affect protected marine species. The probability is rather low that migratory whales and other marine species such as the green sea turtle and hawksbill turtle would be within the area to be impacted by falling debris and boosters. Should whales or sea turtles be observed during prelaunch survey flights of the hazard areas of the Kauai Test Facility, flight tests would be delayed until these species vacate the area.

An early flight termination or mishap could result in debris impact along the flight corridor. However, sensitive marine species are widely scattered, and the probability of debris striking a threatened or endangered species is considered remote.

Evaluation by the National Aeronautics and Space Administration of the effects of missile systems that are deposited in seawater concluded that the release of hazardous materials

aboard missiles into seawater would not be significant. Materials would be rapidly diluted and, except for the immediate vicinity of the debris, would not be found at concentrations identified as producing any adverse effects.

Hazardous Materials and Waste

Transportation of the boosters would be conducted in accordance with applicable regulations and would not be a hazardous materials or hazardous waste impact. Handling of all hazardous materials would be conducted according to Standard Operating Procedures, which would be designed to minimize hazardous materials impacts to personnel and the environment. Any item containing asbestos would be disposed of as hazardous waste according to applicable regulations. All waste materials and chemicals used in flight preparations, such as cleaning rags, solvents, and lubricants, would be handled and disposed of according to all applicable Federal and state regulations.

In the case of an off-nominal flight, hazardous debris containing asbestos, magnesium-thorium, or other potentially reactive materials may occur. A debris-recovery team would be supplied to locate and recover the debris, and if required, dispose of or destroy contaminated, classified, or hazardous material. All hazardous materials would be handled and disposed of according to all applicable Federal and state regulations.

The amount of hazardous waste generated by the proposed activities would be similar to those wastes already generated by past missile programs, and no substantial hazardous materials or hazardous waste impacts are expected.

Health and Safety

All Strategic Target System launch activities would be in compliance with Federal, state, and local health and safety requirements outlined in the Sandia National Laboratories and Kodiak Launch Complex health and safety plans. Health and safety plans would provide guidance in meeting Federal, state, and local health and safety requirements, and transportation regulations. All pre-flight hazardous operations would be conducted in accordance with appropriate safety regulations to minimize potential risks to mission personnel and the general population.

Applicable safety measures would be instituted at Kodiak Airport to ensure the safety of the general public, Coast Guard personnel, and mission personnel, such as specifying parking areas, establishing (and enforcing) applicable explosive safety-quantity distances (ESQDs), restricting handling and transportation of missile components to properly-trained personnel, and using established and permitted transportation routes from Kodiak Airport to Kodiak Launch complex. In the event of a search and rescue operation, hazardous activities at the airport or the launch site would stop or move to allow the Coast Guard to proceed and would resume after an all clear is provided. Therefore, no effects to Coast Guard operations are expected. If the alternate parking area proposed for the military transport aircraft is utilized, coordination would be initiated with the Alaska State Parks, Kodiak Division at least 30 days before the missile's arrival to ensure campsites or facilities

within the ESQD at the Buskin River State Recreation Site would be vacated before the arrival of the aircraft.

Due to the establishment of and enforcement of ESQDs, no health and safety impacts are anticipated for the general public. Adherence to appropriate safety regulations and operating plans would serve to maintain mission personnel health risks within acceptable levels. To protect persons on Kodiak Island before and during each launch, nonparticipants would be excluded from the safety exclusion zone. Naval Air Warfare Center Weapons Division would establish the exclusion zone around the launch site and along the missile flight path no less than 4 hours before each launch. They would then ensure the safety exclusion zone is verified clear of non-mission essential personnel and vessels out to the territorial limit approximately 20 minutes before launch. All site personnel would be relocated to the Launch Control and Management Center for the actual launch. Commercial and private aircraft and ocean vessels would be notified in advance of launch activities. However, since commercial and private aircraft and ocean vessels could still be in the hazard zone, Range Safety protocol limits the potential for risk to the general public and non-mission aircraft and ships to less than 1 in 10 million, in compliance with Range Commanders Council 321-00. If during prelaunch activities it is determined that general public or non-mission aircraft and ships are at a higher level of risk, launch activities would cease until they are at a lower level of risk. Thus, commercial and private craft would be able to reschedule or choose alternate routes before the flight experiments.

The boosters would be transported from Redstone Arsenal via military aircraft to PMRF in accordance with applicable transportation regulations. The Strategic Target System boosters would be processed and prepared for launch in the same manner as previous flights with the exception of one minor change—newer A3R first- and second-stage motors could be used in addition to the older A3P motors. These newer motors would have the same propellants and emission characteristics as the A3P motors and as such, no new impacts to health and safety would be anticipated.

Public access to the area within the ESQD would be restricted for the length of time the booster is on the launch pad; 24-hour security would be provided during this time to ensure that the safety distance criterion is met. The current restrictive easement at PMRF would be used to set up the launch hazard area to ensure public safety during launch. To minimize safety risk to the public in these areas, PMRF security forces on the ground, in boats, and in helicopters (if necessary), would use sweep and search measures to ensure that all areas within the launch hazard area are determined clear of people by 10 minutes before launch. In addition, security forces would set up control points along the road into the launch hazard area to monitor and clear traffic during launch operations. There are no public buildings within this off-base area. All nonessential personnel on the installation would be cleared from the launch hazard area, and launch personnel within the launch hazard area would be provided personal protection equipment. Immediately after a successful launch, security forces would give the all clear signal, and the public would be allowed to re-enter the area.

Commercial and private aircraft and ocean vessels would be notified in advance of launch activities and thus would be able to reschedule or choose alternate routes before the flight experiments.

Noise

All public, civilian, and nonessential personnel would be required to be outside of the GHA. Expected noise levels beyond the GHA would be below the 115 dBA limit for short timeframe exposure. Since the Strategic Target System vehicle would be audible only for a few seconds, no significant effect would be expected in the public. In addition, the infrequency of launches would not significantly impact the ambient noise levels.

Launch of the Strategic Target System has been previously analyzed and determined not to have a significant impact within the PMRF region of influence.

Socioeconomics

Economic benefits are expected to be short-term and primarily in the form of lodging, retail, and possible tourist activities. No population impacts are anticipated. Socioeconomic impacts to commercial fishing and shipping would be minimal. Coast Guard assistance would be utilized on an as-available non-interference basis and would be funded for services provided.