MEMORANDUM FOR: The Record

FROM: Donna S. Wieting MAR 15 2017
Director, Office of Protected Resources

SUBJECT: Categorical Exclusion for the Issuance of a Final Rule for the Taking of Marine Mammals Incidental to Space Vehicle and Missile Launch Operations at the Pacific Spaceport Complex Alaska (PSCA), Kodiak, Alaska

ENCLOSURE: (1) Status of Affected Species

NOAA Administrative Order (NAO) 216-6A requires all proposed projects to be reviewed with respect to environmental consequences on the human environment. This memorandum addresses the determination that the issuance of regulations and a Letter of Authorization (LOA) to Alaska Aerospace Corporation (AAC) qualifies to be categorically excluded from further National Environmental Policy Act (NEPA) review.

Proposed Federal Action

The National Marine Fisheries Service (NMFS) proposes to issue regulations and an LOA to AAC pursuant to Section 101(a)(5)(A) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq.*) and the regulations governing the taking and importing of marine mammals (50 Code of Federal Regulations (CFR) Part 216). The rule and LOA period is for five years and will be valid March 15, 2017 to March 14, 2022 and authorizes takes, by Level B harassment only, of harbor seals (315 annually; 1,575 over the five-year period), incidental to conducting rocket launch operations (i.e., rockets, missiles and other smaller missile systems) from the Pacific Spaceport Complex Alaska (PSCA). NMFS' proposed action is a direct outcome of the applicant's request summarized below.

Description of Applicant(s) Incidental Take Authorization Request

On April 25, 2016, AAC submitted an application to NMFS requesting an authorization for the possible harassment of small numbers of harbor seals (*Phoca vitulina richardii*) associated with rocket launch operations. A rocket launch operation takes years to plan and execute, as well as a large preparation effort weeks before the launch. Launch Pad 1 is the closest pad to the haulouts on Ugak Island (3.5 miles south of PSCA) from which the largest and, therefore, loudest vehicles will be launched. AAC estimates the total number of vehicles that may be launched from PSCA over the course of the 5-year period covered by the requested rulemaking is 45, with an average of nine launches per year. However, in previous years, AAC did not launch the estimated number, but fewer or none in some years. For the current authorization request, only a few launches are on contract at this time, so a specific distribution cannot be given. The first anticipated launch is

estimated to occur in May 2017 and generally, the frequency of launches will be separated by months or years; however, there may be limited instances of a rapid succession of launches in the course of hours or days. Any disturbances to pinnipeds from space vehicle and missile launch operations will span only a few seconds tapering off to inaudible within minutes.

Applicable Categorical Exclusion

Based on the information presented in this document and the application, the issuance of a rule and LOA to AAC for take, by Level B harassment, of small numbers of marine mammals incidental to rocket launch operations is consistent with activities identified in categorical exclusion (CE) B4 and there are no extraordinary circumstances with the potential for significant environmental effects that would preclude the issuance of a rule and LOA from being categorically excluded. The following summarizes the relevant factors supporting a CE determination for this action.

Determination Summary

In determining whether a CE is appropriate for a given ITA, NMFS considers the applicant's specified activity (applicant's action) and the potential extent and magnitude of takes of marine mammals associated with that activity along with the extraordinary circumstances listed in the Companion Manual for NAO 216-6A. The evaluation whether extraordinary circumstances (if present) have the potential for significant environmental effects is limited to the decision NMFS is responsible for, which is issuance of the ITA (NMFS' action). While there may be environmental effects associated with the underlying action, potential effects of NMFS' action are limited to those that would occur due to the authorization of incidental take of marine mammals. NMFS prepared numerous Environmental Assessments (EAs) analyzing the environmental impacts of the categories of activities encompassed by CE B4 which resulted in Findings of No Significant Impacts (FONSIs). These EAs demonstrate the issuance of a given ITA does not affect other aspects of the human environment because the action only affects the marine mammals that are the subject of the ITA. These EAs also addressed factors in 40 CFR 1508.27 regarding the potential for significant impacts and demonstrate the issuance of ITAs for the categories of activities encompassed by CE B4 do not individually or cumulatively have a significant effect on the human environment. For these reasons, circumstances which are not affected by the issuance of an ITA associated with "take" are not evaluated in detail herein.

1. Effects of Take

The issuance of regulations and an LOA to AAC is expected to result in minor, short-term behavioral effects. Acoustic and visual stimuli associated with the rocket launches has the potential to cause harbor seals in the vicinity of the launch area to be behaviorally disturbed and therefore, qualifies for an authorization from NMFS. Disturbance to harbor seals caused by AAC's rocket launches are expected to occur in short-term intervals, separated by significant amounts of time in which no disturbance occurs. Because such disturbance is sporadic, rather than chronic, and of low intensity, individual harbor seals are unlikely to incur any detrimental impacts to vital rates or ability to forage and, thus, loss of fitness. Correspondingly, even local

populations are extremely unlikely to accrue any significant detrimental impacts, much less the overall stocks of animals. The infrequent (approximately nine times per year) and brief (approximately one minute as heard from Ugak Island) nature of these sounds that would result from a rocket launch is not expected to alter the population dynamics of harbor seals which utilize Ugak Island as a haulout site. Current harbor seal numbers on Ugak Island total around 1,500, which is an increase of about 1,100 since the 1990s; therefore, population dynamics of harbor seals have also not been negatively impacted from past launches originating from PSCA. While there may be adverse effects on individual marine mammals, the activity is not likely to result in adverse effects on the stocks or populations. A summary of the status of the marine mammal stocks is listed in Enclosure (1); additional information can be found in NMFS' Stock Assessment Reports, which are available at *http://www.nmfs.noaa.gov/pr/sars*.

Although ACC's proposed activities will take place at PSCA on Kodiak Island, effects (*i.e.*, disturbance) will occur for pinnipeds on Ugak Island (3.5 miles south of Kodiak Island). Because the effects of this action are primarily acoustic in nature, and though they may cause temporary behavioral modification in some vertebrates, they are not expected to have adverse impacts on other species or habitat in this area. Due to the infrequency of the launches and the manner in which debris will be widely scattered, NMFS believes it is highly unlikely that fish populations or other species would be affected either by impact or ingestion of debris and the rule and LOA include measures to avoid or minimize effects to any protected species that may occur in this area. The proposed activities will not take place within or near wetlands, National Marine Sanctuaries or Marine Protected Areas, State National Parks or wilderness areas, wildlife refuges or properties listed or eligible for listing on the National Register Historic Places, National Historic Landmarks or National Monuments.

Finally, the mitigation measures in the regulations and LOA are intended to minimize the potential for adverse impacts and mitigate the extent of any unavoidable adverse impacts. AAC will be required to submit annual reports in which they must provide an accounting of the numbers of marine mammals taken. NMFS can modify the LOA if there is reason to believe the activity is having or has the potential to have an adverse effect on the species or stock.

2. Other Relevant Factors

The issuance of this rule and LOA will not result in highly controversial environmental effects or result in environmental effects that are uncertain, unique or unknown because AAC has been operating since 1996 and other launch facilities conducting similar activities have been operating far longer. In addition, these proposed activities are well-understood and documented; prior authorizations and analysis demonstrates issuance of rules and LOAs only affects the marine mammals that are the subject of the authorization. In 2005, NMFS prepared an EA for the promulgation of regulations authorizing take of marine mammals incidental to rocket launches at PSCA. NMFS found that the promulgation of a five-year rulemaking in 2006 (71 FR 4297) and issuance of subsequent LOAs would not significantly impact the quality of the human environment and therefore issued a FONSI. In 2010, NMFS issued another FONSI for the issuance of regulations and subsequent LOAs in 2011 to ACC (76 FR 16311).

The issuance of this rule and LOA will not establish a precedent for future actions or represent a decision in principle about future actions with potentially significant environmental effects because NMFS actions under the MMPA Section 101(a)(5)(A) are considered individually and is based on the best available scientific information, which is continuously evolving. Therefore, issuance of an ITA to a specific individual or organization for a given activity does not guarantee or imply NMFS will authorize others to conduct similar activities. Subsequent requests for ITAs are evaluated upon their own merits relative to the criteria established in the MMPA and 50 CFR Part 216 on a case-by-case basis.

NMFS compliance with environmental laws, regulations and Executive Orders (EOs) is based on NMFS proposed action and the nature of the applicants proposed activities. Therefore, NMFS and AAC consulted with the Alaska Regional Office (AKRO) under Section 7 of the ESA to determine if the issuance of regulations and LOA would likely jeopardize the continued existence of listed species or result in an adverse modification of critical habitat. As a result, AKRO determined there would be no effect to any listed species and neither an informal or formal consultation is required. This rulemaking, while necessary for the conservation and management of marine mammals, does not affect policies relevant to the National Standards of the Magnuson-Stevens Act (MSA) and will not result in adverse impacts to Essential Fish Habitat. There are no other environmental laws, regulations, EOs, consultations, federal permits or licenses applicable to NMFS for issuance of this authorization to AAC.

Status of the Affected Species

Harbor Seals

The only marine mammals anticipated to be affected by the specified activities and authorized as take for Level B harassment are harbor seals hauled out on Ugak Island and therefore they are the only marine mammal discussed further.

Harbor seals range from Baja California north along the west coasts of Washington, Oregon, California, British Columbia, and Southeast Alaska; west through the Gulf of Alaska, Prince William Sound, and the Aleutian Islands; and north in the Bering Sea to Cape Newenham and the Pribilof Islands. The current statewide abundance estimate for Alaskan harbor seals is 205,090 (Boveng *et al.* in press as cited in Muto *et al.*, 2015), based on aerial survey data collected during 1998-2011. In 2010, harbor seals in Alaska were partitioned into 12 separate stocks based largely on genetic structure (Allen and Angliss 2010). Harbor seals have declined dramatically in some parts of their range over the past few decades, while in other parts their numbers have increased or remained stable over similar time periods.

Seals on Ugak Island are considered part of the South Kodiak stock (see Table 1 below) – ranging from Middle Cape on the west coast of Kodiak Island southwest to Chirikof Island and east along the south coast of Kodiak Island to Spruce Island, including the Trinity Islands, Tugidak Island, Sitkinak Island, Sundstrom Island, Aiaktalik Island, Geese Islands, Two Headed Island, Sitkalidak Island, Ugak Island, and Long Island (Muto *et al.*, 2015). A significant portion of the harbor seal population within the South Kodiak stock is located at and around Tugidak Island off the southwest coast of Kodiak Island. Sharp declines in the number of seals present on Tugidak were observed between 1976 and 1998. The highest rate of decline was 21 percent per year between 1976 and 1979 (Pitcher 1990 as cited by Muto *et al.*, 2015). While the number of seals on Tugidak has stabilized and shown some evidence of increase since the decline, the population in 2000 remained reduced by 80 percent compared to the levels in the 1970s (Jemison *et al.,* 2006 as cited by Muto *et al.*, 2015). The current (2007-2011) estimate of the South Kodiak population trend is -461 seals per year, with a probability that the stock is decreasing of 0.72 (Muto *et al.*, 2015). Only the South Kodiak stock is considered in this application because other stocks occur outside the geographic area under consideration.

Table 1. Harbor Seal Status Information.

Species	Stock	ES)/MMPA status; Strategic (Y/N)[1]	Stock abundance (N_{min}, most recent abundance survey)[2]	PBR[3]	Annual M/SI[4]	Relative occurrence/season of occurrence
Harbor seal	South Kodiak (Alaska)	-; N	19,199 (17,479; 2011)	314	128	Harbor seals are year-round inhabitants of Ugak Island, Alaska

[1]Endangered Species Act (ESA) status: Endangered (E), Threatened (T)/MMPA status: Depleted (D). A dash (-) indicates that the species is not listed under the ESA or designated as depleted under the MMPA. Under the MMPA, a strategic stock is one for which the level of direct human-caused mortality exceeds PBR (see footnote 3) or which is determined to be declining and likely to be listed under the ESA within the foreseeable future. Any species or stock listed under the ESA is automatically designated under the MMPA as depleted and as a strategic stock.

[2]N_{min} is the minimum estimate of stock abundance. The most recent abundance survey that is reflected in the abundance estimate is presented; there may be more recent surveys that have not yet been incorporated into the estimate.

[3]Potential biological removal, defined by the MMPA as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population size (OSP).

[4]These values, found in NMFS' SARs, represent annual levels of human-caused mortality plus serious injury from all sources combined (*e.g.*, commercial fisheries, subsistence hunting, ship strike). Annual M/SI often cannot be determined precisely and is in some cases presented as a minimum value. All values presented here are from the final 2015 Harbor Seal, Alaska SAR. (*http://www.nmfs.noaa.gov/pr/sars/pdf/stocks/alaska/2015/ak2015_sehr.pdf*).

Harbor seals are the most abundant marine mammal species found within the action area and present year-round. Based on AAC aerial survey counts from launch monitoring reports conducted since January 2006, approximately 97 percent of all harbor seals are found on the eastern shore of Ugak Island, approximately 5 mi from LP1. The eastern shore is backed by high steep cliffs that reach up to 1,000 ft above sea level. These cliffs form a visual and acoustic barrier to rocket operations, and limit effects on the species. Additionally, sound pressure recordings that showed surf and wind-generated sound pressures at sea level were generally in the greater than >70 dBA (SEL) range on the best weather and surf days (Cuccarese *et al.*, 1999; 2000); while sound pressures at sea level can exceed 100 dBA (SEL) during inclement weather. Ugak's eastern shore is windward to prevailing winds and surf noise is routinely high. The remaining three percent of the harbor seals identified during surveys are found at the northern shore of Ugak Island. Harbor seals located on the northern shore are not as protected from launch noise, and therefore may be harassed (Level B) incidentally to AAC's rocket launch activities. However, harbor seal abundance on the northern shore is limited due to the lack of suitable habitat (*i.e.*, few beaches). During 30 aerial surveys conducted by AAC during six rocket launches from 2006-2008, no seals were observed on North Ugak Island on 19 occasions. During surveys when seals were present, the average abundance was 25 seals with a single day count of 125 individuals.

Because access to Ugak Island harbor seal haulouts is difficult, little is known of how seals use these habitats. Harbor seals generally breed and molt where they haulout, so it is assumed that both of these activities take place on Ugak Island. This assumption is supported by the fact that young seals have routinely been seen there during aerial surveys. These haulouts are the only haulouts used by harbor seals within the 6-mi radius area designated as being affected by launch operations.