



MARINE MAMMAL COMMISSION

19 May 2014

Ms. Jolie Harrison, Supervisor
Incidental Take Program
Permits and Conservation Division
National Marine Fisheries Service
Office of Protected Resources
1315 East-West Highway
Silver Spring, MD 20910

Dear Ms. Harrison:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the February 2014 application from BP Exploration (Alaska), Inc. (BP), seeking an incidental harassment authorization under section 101(a)(5)(D) of the Marine Mammal Protection Act to take small numbers of marine mammals by harassment incidental to a shallow geohazard survey in Foggy Island Bay, Beaufort Sea, Alaska during the 2014 Arctic open-water season. The Commission has also reviewed the National Marine Fisheries Service's (NMFS) 16 May 2014 notice (79 Fed. Reg. 21522) announcing receipt of the application and proposing to issue the authorization, subject to certain conditions.

BACKGROUND

BP proposes to conduct a shallow geohazard survey at its Liberty field in Foggy Island Bay, Alaska from 1 July to 30 September 2014. The survey would occur in two phases—a site survey (Phase I) and a sonar survey (Phase II). The site survey would focus on obtaining shallow geohazard data over approximately 31 km² using a seismic airgun array with a discharge volume of 30 in³. The sonar survey would collect geohazard data in the same site survey area and also over a 13 km² area proposed for a subsea pipeline corridor. The sonar survey would use a multibeam echosounder, sidescan sonar, sub-bottom profiler, and magnetometer. Water depth in the survey area ranges from 0.6 to 7.3 m. The entire survey would occur during a 20-day period with 7.5 days for the site survey, 5 days for equipment changes, and 7.5 days for the sonar survey. The surveys would be conducted 24 hours per day and would cease on 25 August.¹

NMFS has preliminarily determined that the proposed activities could temporarily modify the behavior of small numbers of up to nine species of marine mammals, but that the total taking would have a negligible impact on the affected species or stocks. NMFS does not anticipate any take of marine mammals by death or serious injury. NMFS also believes that the potential for temporary or permanent hearing impairment from the survey would be at the least practicable level because of BP's proposed mitigation and monitoring measures, as well as additional measures proposed by NMFS, which include—

¹ Activities occurring after 25 August would include equipment retrieval and crew demobilization.

- (1) using NMFS-approved, vessel-based observers on the source vessels to monitor marine mammals within (1) the 190- and 180-dB re 1 μ Pa exclusion zones and (2) the 160-dB re 1 μ Pa harassment zone;
- (2) monitoring activities during daylight hours throughout the entire survey period, including when airguns and other sound sources are not operating;
- (3) using ramp-up, delay, power-down, and shut-down procedures to prevent takes of marine mammals within the exclusion zone;
- (4) not commencing ramp-up of the airgun from a full shut-down in periods of poor visibility if the entire 180-dB re 1 μ Pa exclusion zone is not visible;
- (5) ceasing airgun and other sound-generating operations on 25 August 2014;
- (6) prohibiting the continuous firing of a single airgun for longer than three hours when the purpose of doing so is to avoid the requirement to monitor the exclusion zone prior to and during ramp-up procedures;
- (7) avoiding vessel and aircraft interactions with whales through operational and speed reduction procedures as appropriate;
- (8) conducting a fish monitoring program;
- (9) reporting injured and dead marine mammals to the NMFS Office of Protected Resources, the NMFS Alaska Stranding Hotline, and the Alaska Regional Stranding Coordinators; and
- (10) submitting field and technical reports and a final comprehensive report to NMFS.

Availability of marine mammals for subsistence

For the proposed seismic survey BP has signed a conflict avoidance agreement with the Alaska Eskimo Whaling Commission and the whaling captains' associations of 11 North Slope communities. BP has also met, and plans to continue meeting, with various stakeholders to develop and implement appropriate mitigation measures. Such measures are intended to minimize impacts on Alaska Natives, who use marine mammals for subsistence. As part of the plan, BP would not commence airgun operations until after the spring hunt has occurred and would cease airgun and other sound-generating operations on 25 August, before the start of the Cross Island fall bowhead whale hunt. BP would also work closely with affected communities and employ local Inupiat communicators. Based on the description of the proposed activity and associated mitigation measures, NMFS has preliminarily determined that the proposed taking would not have an unmitigable adverse impact on the availability of marine mammals for subsistence use by Alaska Natives.

RECOMMENDATIONS AND RATIONALE

Thresholds and take estimates for use of the sub-bottom profiler

NMFS has proposed takes associated with the use of the seismic airguns; however, no takes were proposed for the use of the other sound sources, including the multibeam echosounder, sidescan sonar, and sub-bottom profiler. Of particular concern to the Commission is the lack of proposed takes associated with the sub-bottom profiler, a non-impulsive, intermittent sound source. Researchers have observed that various species of marine mammals, including harbor porpoises, respond to sound from sources with characteristics similar to a sub-bottom profiler and at received levels below 160 dB re 1 μ Pa. As discussed in previous letters to NMFS regarding non-impulsive intermittent sources (see for example the Commission's letter dated 5 March 2014), the temporal

and spectral characteristics of such sources suggest that a precautionary Level B harassment threshold of 120 dB re 1 μ Pa should be used when establishing harassment zones, estimating takes, and developing mitigation measures.

NMFS has indicated that it is evaluating the broader use of these sources to determine under what specific circumstances requests for incidental taking would be advisable (or not) and also is working on guidance that would outline a consistent approach for addressing potential impacts from those types of sources (78 Fed. Reg. 57354). NMFS presumably would include non-impulsive, intermittent sources in its guidance on applicable Level B harassment thresholds for behavior. In the interim, the Commission recommends that NMFS require BP to 1) include take estimates resulting from the use of the sub-bottom profiler based on the 120-dB re 1 μ Pa threshold and 2) revise its monitoring measures as necessary to include monitoring of sub-bottom profiler activities.

Estimating takes associated with a moving sound source

BP used different methods for different species to estimate the number of takes expected to result from the proposed seismic survey. For beluga and bowhead whales, it used data from the 2012 and 2013 Aerial Surveys of Arctic Marine Mammals (ASAMM) flown in July and August in the Beaufort Sea to estimate minimum, average, and maximum densities. BP then multiplied the species-specific densities by size of the harassment zone and the number of survey days. For ringed, bearded, and spotted seals, it used observer sightings data, collected during four shallow-water ocean bottom cable seismic surveys in the Beaufort Sea, to derive average and maximum density estimates. BP then multiplied the sightings per hour by size of the harassment zone and the number of survey hours. For other species expected to be encountered only rarely during the survey (killer whales, harbor porpoises, gray whales, and ribbon seals), density data were not available and BP instead estimated numbers of takes based on the likelihood of occurrence in the survey area.

An accurate characterization of the size of the harassment zone is necessary for obtaining reliable estimates of the numbers of animals taken. BP estimated the Level B harassment zone radius for seismic activities to be 1.6 km, based on the 160-dB re 1 μ Pa threshold; the corresponding ensonified area² on any given day would be 8 km². However, using the area of a circle to estimate the size of the ensonified area would be correct only if the sound source was stationary. For surveys in which the sound source is moving, the ensonified area should be based on the total linear distance surveyed by the vessel in a day, taking into account the distance to the Level B harassment threshold. That area would presumably be more than the 8 km² estimated for seismic activities. Accordingly, the Commission recommends that NMFS require BP to recalculate take estimates for beluga and bowhead whales and ringed, bearded, and spotted seals incidental to seismic airguns using the revised ensonified area estimates for a moving sound source. Similarly, BP should estimate the size of the ensonified area associated with the use of the vessel-based sub-bottom profiler using an area estimate based on a moving sound source. The Commission further recommends that NMFS require BP to base its take estimates incidental to the sub-bottom profiler on ensonified area estimates for a moving sound source.

² The ensonified area was estimated to be 1.6 km x 1.6 km x 3.14 based on the area of a circle, which equates to 8 km².

Ms. Jolie Harrison
19 May 2014
Page 4

Monitoring measures

BP has proposed that observers would monitor for marine mammals 30 minutes before and during the proposed activities. NMFS agreed with that approach but did not include a requirement for post-activity monitoring. In general, post-activity monitoring is needed to ensure that marine mammals are not taken in unexpected or unauthorized ways or in unanticipated numbers. Some types of taking (e.g., taking by death or serious injury) may not be observed until after the activity has ceased. Post-activity monitoring is the best way, and in some situations may be the only reliable way, to detect certain impacts. Accordingly, the Commission recommends that NMFS require BP to monitor for marine mammals 30 minutes before, during, and 30 minutes after the proposed activities.

The Commission appreciates the opportunity to review this incidental harassment authorization. Please contact me if you have questions regarding these recommendations.

Sincerely,

A handwritten signature in blue ink that reads "Rebecca J. Lent". The signature is written in a cursive style with a large initial "R".

Rebecca J. Lent, Ph.D.
Executive Director

cc: Jon Kurland, National Marine Fisheries Service Alaska Regional Office
Jim Kendall, Bureau of Ocean Energy Management Alaska Region