MARINE MAMMAL COMMISSION

2 April 2012

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Dear Sirs:

The Marine Mammal Commission recently held its 2012 annual meeting in Anchorage, Alaska. A major portion of the meeting focused on human activities in the Arctic, including oil and gas development. Staff from the Bureau of Ocean Energy Management, the Bureau of Safety and Environmental Enforcement, Shell, and Alaska Clean Seas updated the Commission on the status of exploration and drilling activities in the Arctic and actions that are being or will be taken to prevent, contain, and respond to an oil spill.

RECOMMENDATIONS

Based on discussions at its annual meeting, the Marine Mammal Commission recommends that—

- the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement require Shell to cease Beaufort Sea drilling and associated operations in mid-September to reduce the possibility of having to respond to a large oil spill in icy Arctic conditions, and
- the Bureau of Safety and Environmental Enforcement (1) develop and impose on the industry appropriate response standards, (2) confirm the availability of the necessary personnel and equipment, (3) and verify that the responders can meet the standards using tabletop and field exercises; the exercises should be performed prior to and during drilling activities, be assessed using specific performance measures established and verified by the Bureau, and be sufficient to demonstrate adequate response capabilities for the conditions that may occur.

RATIONALE

Drilling late in the open-water season

In the Chukchi Sea the Department of the Interior and the Bureau of Ocean Energy Management are prohibiting exploratory drilling within 38 days of the average date of first ice over the drill site. The prohibition was based on limited drilling experience and spill response infrastructure in that area. The Commission supports that prohibition but also has recommended that it be applied to exploratory drilling in the Beaufort Sea, as explained in more detail in the attached letters to the National Marine Fisheries Service. In those letters, the Commission noted that spill response experience, capability, and infrastructure are lacking throughout the Arctic, and that limited response capabilities and developing ice conditions would make it virtually impossible to respond effectively to an oil spill late in the open-water season.

In light of those concerns, it is not clear why the Department and Bureau of Ocean Energy Management also did not similarly restrict the Beaufort Sea drilling season. The Commission recognizes that oil companies have more experience drilling in the Beaufort Sea, and more trained personnel and vessels along the North Slope. However, the risk of encountering ice conditions in the Beaufort Sea before the drilling season has ended may be greater than in the Chukchi. Compared to the Chukchi Sea, the Beaufort Sea freezes earlier in the winter and also retains a higher proportion of thicker, multi-year ice (Mahoney 2012, enclosed). The presence of ice and the harsh environmental conditions, including severe storms, that exist in the Beaufort in October are likely to make spill response late in the season extremely challenging.

Shell's revised Oil Discharge Prevention and Contingency Plan for Camden Bay outlines a number of measures for preventing and responding to a spill and the Commission welcomes the company's efforts to prevent a spill and prepare a response strategy. Nonetheless, everyone should recognize that all parties involved are "in uncharted waters" with respect to responding to a spill in this kind of environment. In addition, the Beaufort Sea ecosystem may be highly vulnerable to the effects of a spill. Although both the industry and the Bureau are taking many important steps to protect that ecosystem, more could reasonably be done to improve planning and protection measures. For example, the plan includes worst-case discharge scenarios, but they are based on an August spill rather than a late October spill, which would be a more appropriate worst case. The plan does include a "response strategy" for a spill occurring on October 1, but it notes that as the response continues into its second week "the hours of daylight and average air temperatures continue to drop, making oil surveillance and tracking more difficult, along with the location, containment, and recovery of oil." The plan also notes that "the formation of grease ice and nilas (e.g., a thin elastic crust of ice up to 10 centimeters thick that bends easily under pressure) makes it increasingly difficult to work with booms as they begin to fill with ice, preventing the effective collection of oil." The plan then states that "as freeze-up continues and blowing snow begins to accumulate on young ice, it becomes impossible to operate the physical containment and recovery systems safely and effectively." These statements, coupled with spill response history, indicate that Shell has little chance of recovering oil that spills after October 1, when new ice is forming.

Shell's Oil Discharge Prevention and Contingency Plan states that if a spill were to occur late in the season and the company was unable to fully recover the oil, it would be prepared to conduct extensive monitoring and tracking of any oil that is released to the Beaufort Sea. However, the plan does not provide assurance that the remaining oil ultimately would be recovered. Although studies indicate that oil spilled beneath growing ice would be quickly entrained or encapsulated (Dickins and Buist 1981, Kovacs et al. 1981), newly formed ice is unstable and can move considerable distance from the original spill site during fall freeze-up (October through December). Recovery of oil from landfast ice is possible theoretically, but winter weather conditions on the North Slope would control the feasibility of recovery operations (Glover and Dickins 1999). Oil left to over-winter in ice would again be subject to unstable conditions and movement during spring break-up (June and July). Once the ice melts and the entrained oil is released, access to and recovery (or burning) of the freshly released oil before it disperses is, again, theoretically possible (Glover and Dickins 1999), but very challenging and, in the Commission's view, unlikely.

For all these reasons, the Marine Mammal Commission recommends that the Bureau of Ocean Energy Management and the Bureau of Safety and Environmental Enforcement require Shell to cease Beaufort Sea drilling and associated operations in mid-September to reduce the possibility of having to respond to a large oil spill in icy Arctic conditions. The Commission makes this recommendation mindful of the fact that responding to a spill before mid-September also could be a very great challenge.

Demonstrating response effectiveness

Oil spill response planning, communication, and coordination also remain uncertain. Shell noted at the Commission's annual meeting that incident command systems involving industry, federal, state, and local responders—systems critical to an effective response—have yet to be tested rigorously. One important way to test, measure, and strengthen response capabilities, including communications and coordination, is to conduct exercises that simulate all possible spill types under expected and worst-case environmental conditions (e.g., under severe fall weather conditions in the Beaufort Sea, which is characterized by strong and frequent storms) and with the available infrastructure. To date, Shell has conducted only tabletop exercises for Arctic spill response, which the Commission considers necessary but clearly insufficient for identifying key shortfalls in response planning, communication, and coordination. To ensure adequate response capability in both the Chukchi and Beaufort Seas and under the conditions that will or may be encountered, the Marine Mammal Commission recommends that the Bureau of Safety and Environmental Enforcement (1) develop and impose on the industry appropriate response standards, (2) confirm the availability of the necessary personnel and equipment, (3) and verify that the responders can meet the standards using tabletop and field exercises. The drills should be performed prior to and during drilling activities, be assessed using specific performance measures established and verified by the Bureau, and be sufficient to demonstrate adequate response capabilities for the conditions that may occur.

Although it recognizes that the Administration is going to go forward with oil and gas drilling in the Arctic, the Commission has nonetheless recommended on several occasions that the Department of the Interior adopt a slow, phased approach to oil and gas development in that

region. Such a measured approach provides an opportunity to address current data gaps and improve our poor understanding of the potential long-term and cumulative effects of oil and gas development on the Arctic marine ecosystem (Holland-Bartels and Pierce 2011). As exploratory drilling in the Arctic is now imminent, the Commission believes that the Department of the Interior and the Bureaus must ensure that prevention and response capabilities are sufficient to manage the risks involved with such drilling, keeping in mind the sensitivity of the ecosystem, the dependence of Native communities upon marine mammal resources, and the fact that the Arctic already is being perturbed severely by climate disruption.

Please contact me if you have questions regarding these recommendations.

Sincerely,

Timothy J. Ragen, Ph.D.
Executive Director

Enclosures (3)

Cc: James Kendall, Ph.D., Director, Bureau of Ocean Energy Management Alaska Region
Mr. Mark Fesmire, Director, Bureau of Safety and Environmental Enforcement Alaska Region
Mr. Sam Rauch, Acting Assistant Administrator, National Marine Fisheries Service
Mr. Dan Ashe, Director, U.S. Fish and Wildlife Service

References

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