

**MARINE MAMMAL COMMISSION
4340 EAST-WEST HIGHWAY, ROOM 905
BETHESDA, MD 20814**

26 April 1999

Ms. Donna S. Wieting
Chief, Marine Mammal Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, MD 20910-3225

Dear Ms. Wieting:

The Marine Mammal Commission, in consultation with its Committee of Scientific Advisors, has reviewed the U.S. Geological Survey's request for authorization to take small numbers of marine mammals by harassment incidental to seismic surveys off southern California and the National Marine Fisheries Service's 5 March 1999 Federal Register notice concerning the request. Among other things, the Federal Register notice indicates that the Service has made a preliminary determination that, with the mitigation measures proposed, the seismic surveys will result, at worst, in temporary modifications of the behavior of certain pinnipeds and cetaceans, and will have negligible impacts on the potentially affected species and stocks.

The request for an Incidental Harassment Authorization submitted by the U.S. Geological Survey notes on page 10 that "NMFS considers that the maximum SPLs [sound pressure levels] to which marine mammals can be exposed are 180 dB re 1 μ Pa-m RMS for mysticetes and sperm whales, and 190 dB re 1 μ Pa-m RMS for odontocetes and pinnipeds." No citation is provided for this statement and, while the Commission is aware that the referenced sound levels were judged to be appropriate by the panel of experts convened by the Service last September, we were not aware that the Service had accepted or made known the panel's findings in this regard. We presume that the statement is true and request that you provide, for our records, the rationale for these determinations.

On a related matter, we note that the calculations of proposed safety zones are based upon an assumption that much of the sound will be attenuated by the sea bottom and decay with distance "according to $25\log(R)$." We find it hard to understand how the bottom effect which changes the attenuation coefficient can have any influence at ranges of less than the water depth. The authorization request uses $25\log(R)$ to calculate attenuation to threshold levels at ranges as short as 16 m in water depths of 100 m or greater. If the assumption is not valid, the proposed safety zones will not provide reasonable assurance that no marine mammals will be injured seriously as a consequence of the

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surveys. Likewise, the number of animals that may be harassed will be underestimated. The Commission therefore recommends that a more conservative estimate of the attenuation rate be used to calculate the safety zones, or that measurements be made at the beginning of the surveys to confirm the assumed $25\log(R)$ rate within horizontal distances less than the depth of the water column.

We also note that the applicant plans, for economic reasons, to conduct seismic operations throughout the day and night, and to have trained marine mammal observers on board the seismic vessel, working alternating six hour shifts throughout the day and night to determine when marine mammals are within the calculated safety zones and stop seismic operations. The Commission questions whether two observers, working alternating six hour shifts, will be able to effectively monitor and detect marine mammals approaching the designated safety zones, particularly at night and after the first few days working alternating six hour shifts. The Commission therefore recommends that the Service consult with the applicant to better determine the rationale for using two observers as proposed, and, if necessary, require additional observers or changes in the observation protocol to ensure that any taking of marine mammals is by Level B harassment only.

With respect to the last point, the Commission also questions whether the planned nighttime observations will be adequate to assure that any animals approaching or entering the designated safety zones will be detected in time to stop operations so that they are not injured. The Commission therefore recommends that the applicant be required to (1) report at the end of each 24 hour period the species and numbers of marine mammals observed approaching and entering the designated safety zones during the day and during the night; and (2) suspend nighttime operations if the species and number of animals observed approaching and entering the safety zones at night are significantly less than observed during the day, suggesting that nighttime observations are failing to detect significant numbers of animals that enter the safety zones and could be killed or injured.

If you or your staff have questions about these recommendations, please let me know.

Sincerely,


John R. Twiss, Jr.
Executive Director