

**Comments by the Center for Regulatory Effectiveness (“CRE”) on  
Notice of Availability of a  
Supplemental Draft Environmental Impact Statement (“DSEIS”) for  
Effects of Oil and Gas Activities in the Arctic Ocean,  
National Marine Fisheries Service (NMFS), National Oceanic and  
Atmospheric Administration (NOAA): <http://www.gpo.gov/fdsys/pkg/FR-2013-04-10/pdf/2013-08365.pdf> (extending comment period to June 27, 2013);  
and <http://www.fakr.noaa.gov/prules/78fr19212.pdf>  
(original Federal Register notice).  
Comments filed June 25, 2013, at [www.regulations.gov](http://www.regulations.gov),  
NOAA–NMFS–2013–0054.**

## **I. Executive Summary**

The record does not support the changes that NMFS is considering for its acoustic criteria for Level A physical effects. Problems with the Level A record include the following:

- NMFS has not identified any benefits from its considered changes;
- NMFS not discussed the burden/cost/practicability/practical utility of its considered changes;
- NMFS has not addressed the effect of its considered changes on the use of Marine Vibroseis (“MarVib”), an issue which should be expressly addressed in any proceeding that considers new acoustic criteria; and
- NMFS’ “technical memo” in Appendix B of the DSEIS is supposed to support NMFS’ considered changes in Level A criteria; yet this memo states that it does not apply to seismic airguns and pile driving. It doesn’t even mention MarVib.

The Appendix B “technical memo” clearly explains that

“Pile driving and seismic airguns...rely on unique criteria and thresholds agreed upon by Navy and NMFS. The criteria and thresholds for pile driving and airguns are therefore not included in this document.”<sup>1</sup>

“The criteria and thresholds for pile driving and airguns” are the historical and current levels of 120, 160 and 180 dB which are also used to regulate oil and gas seismic.<sup>2</sup> NMFS and the Navy

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<sup>1</sup> DSEIS, Appendix B, page 2, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol3.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol3.pdf)

<sup>2</sup> See Table 16 at <https://www.federalregister.gov/articles/2013/01/31/2013-01817/takes-of-marine-mammals-incident-to-specified-activities-us-navy-training-and-testing-activities> .

continue to use and do not propose any change in these current acoustic criteria for seismic airguns and pile driving. NMFS and the Navy explain, “Existing NMFS criteria was [sic] applied to sounds generated by pile driving and airguns (Table 16).”<sup>3</sup>

Consequently, NMFS’ statements in the DSEIS about the Appendix B “technical memo” supporting and explaining changes in Level A acoustic criteria for oil and gas are inaccurate and misleading; therefore, they violate NMFS’ Information Quality Act (“IQA”) Guidelines.<sup>4</sup>

If NMFS does change the current Level A acoustic criteria, then for MarVib and for oil and gas seismic, NMFS should use the Southall criteria for Level A physical effects.<sup>5</sup> The record for these Southall criteria is clear and supportive, in contrast to the lack of record for the criteria that NMFS is considering.

The DSEIS record is inadequate for any informed comment on any changes that NMFS may be considering in acoustic criteria for Level B behavioral effects. CRE does, however note that the record does not support the need for any more stringent Level B criteria. In addition, NMFS should continue to use line transect to estimate marine mammal takes.

Although MarVib is a promising new technology which likely will never replace seismic airguns, NMFS should more fully recognize the advantages of MarVib in any proceeding involving acoustic criteria. The public should have notice of and an opportunity to comment on this proceeding. The record for this proceeding should be transparent, and the proceeding should comply with IQA Guidelines. Of course, these same requirements should apply to any and all proceedings that consider new acoustic criteria, and NMFS should always assess the practicability of any changes in acoustic criteria.

NMFS will need a new Information Collection Request (“ICR”) under the Paperwork Reduction Act (“PRA”) before NMFS can implement any new acoustic criteria.

Peer review of any new acoustic criteria should comply with OMB’s Peer Review Bulletin. The public should be involved in the peer review process.<sup>6</sup>

Peer review should determine Council for Regulatory Environmental Modeling (“CREM”) compliance for all models used in any new acoustic criteria, like NMFS and the Navy did for the AIM model.<sup>7</sup>

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<sup>3</sup> Navy Draft Atlantic Fleet Training and Testing EIS/OEIS, page 3.4-112 (May 2012), at [http://aftteis.com/Portals/4/aftteis/DEIS/Section/03.04\\_AFTT\\_DEIS\\_Marine\\_Mammals.pdf](http://aftteis.com/Portals/4/aftteis/DEIS/Section/03.04_AFTT_DEIS_Marine_Mammals.pdf).

<sup>4</sup> The NOAA/ NMFS IQA Guidelines are available online at <https://grunt.sefsc.noaa.gov/iqa/> and at [http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html).

<sup>5</sup> These criteria are available in “Marine Mammal Noise Exposure Criteria: Initial Scientific Recommendations,” Southall *et al.*, *Aquatic Mammals*, page 443, Table 3, at [http://sea-inc.net/assets/pdf/mmnoise\\_aquaticmammals.pdf](http://sea-inc.net/assets/pdf/mmnoise_aquaticmammals.pdf).

<sup>6</sup> <http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2005/m05-03.pdf>.

<sup>7</sup> [http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa\\_aim\\_review.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa_aim_review.pdf).

Peer review should also determine compliance with NMFS' IQA Guidelines.<sup>8</sup>

Finally, the National Academy of Sciences ("NAS") has released a major report on assessing risks to species under the Endangered Species Act ("ESA").<sup>9</sup> The NAS prepared this report at the request of NMFS, EPA, the Fish and Wildlife Service ("FWS"), and the U.S. Department of Agriculture. This NAS Report provides the model for all ecological risk assessments. It includes an extensive discussion of IQA Guidelines requirements. NMFS should apply and follow this NAS report in all of NMFS' environmental impact statements and other assessments.

## **II. The Record Does Not Support the New Level A Physical Effects Acoustic Criteria that NMFS is Considering**

NMFS has published and sought comment on new numerical acoustic criteria that NMFS is considering for Marine Mammal Protection Act ("MMPA") Level A physical injury for both pulsed/impulsive and non-pulsed/non-impulsive sounds.<sup>10</sup> We assume that NMFS considers oil and gas offshore seismic (airguns) to be included in the category of pulsed/impulsive sounds. The DSEIS and NMFS' accompanying discussion of it do not mention MarVib; however, we assume that NMFS would include MarVib in the category of non-pulsed/non-impulsive sounds.

NMFS has not identified any benefits from more stringent acoustic criteria. Nor has NMFS discussed the burden and cost of any more stringent criteria. Before NMFS proposes new acoustic criteria, the Service should include some discussion of the benefits and costs of any proposed new criteria.<sup>11</sup> That may be difficult to do because there is no evidence of harm.

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<sup>8</sup> The NOAA/ NMFS IQA Guidelines are available online at <https://grunt.sefsc.noaa.gov/iqa/> and at [http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html).

<sup>9</sup> *Assessing Risks to Endangered and Threatened Species from Pesticides* ("NAS Report"), pages 6, 31, 34, available online at <http://www.thecre.com/forum1/?p=6116>.

CRE submitted written comments to the NAS during its review and report preparation. CRE's comments to the NAS are available online at <http://www.thecre.com/forum1/?p=4569>. CRE's comments to the NAS are incorporated herein by reference.

<sup>10</sup> DSEIS, Page 4-17, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf). NMFS' Federal Register notice and the DSEIS do not mention MarVib. The DSEIS discusses on-ice vibroseis, but not MarVib. Observations about marine mammal effects from on-ice vibroseis "have limited relevance to marine mammals in the water and exposed to sound from an underwater MarVib source." Environmental Assessment of Marine Vibroseis, LGL Ltd. and Marine Acoustics Inc, (April 2011) ("MarVib Assessment"), page 116, [http://www.soundandmarinelife.org/Site/Products/EA%20of%20MarVibr-LGL&MAI-20Apr'11\(final\).pdf](http://www.soundandmarinelife.org/Site/Products/EA%20of%20MarVibr-LGL&MAI-20Apr'11(final).pdf). On page 4, the MarVib Assessment categorizes MarVib as "nonpulsed."

<sup>11</sup> See, e.g., U.S. Presidential Executive Order 13563, <http://www.whitehouse.gov/the-press-office/2011/01/18/improving-regulation-and-regulatory-review-executive-order>, which requires that significant new rules be supported by a cost benefit analysis.

The National Academy of Sciences/National Research Council (“NAS”) has agreed with BOEM and the Department of Interior that “there are no documented or known population-level effects due to sound.” The NAS has concluded with regard to the entire Outer Continental Shelf (“OCS”) that “[T]here have been no known instances of injury, mortality, or population level effects on marine mammals from seismic exposure....”<sup>12</sup>

NMFS agrees that “to date, there is no evidence that serious injury, death, or stranding by marine mammals can occur from exposure to airgun pulses, even in the case of large airgun arrays.”<sup>13</sup>

BOEM has repeatedly and correctly pointed out that

“Within the [Gulf of Mexico] CPA, which is directly adjacent to the [GOM Eastern Planning Area], there is a long-standing and well-developed OCS Program (more than 50 years); there are no data to suggest that activities from the preexisting OCS Program are significantly impacting marine mammal populations.”<sup>14</sup>

Just as there is no record showing any harm from GOM seismic, there is no record supporting derivation of the new acoustic criteria that NMFS is considering.

For example, the DSEIS expressly and inaccurately relies on its Appendix B “technical memo” to support and explain new Level A physical injury criteria for all sounds:

“Last, the cSEL thresholds outlined above take into account the frequency range of highest sensitivity for each functional hearing group and are intended to be used in conjunction with frequency weighting functions that are depicted below (Figures 4.6-2 and 4.6-3) **and outlined in more detail in Finneran and Jenkins (2012) technical memo (Appendix B).**”<sup>15</sup>

NMFS’ reliance is misplaced because the Appendix B “technical memo” expressly does not apply to seismic or pile driving, and it never mentions MarVib.

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<sup>12</sup> See, e.g., Outer Continental Shelf Oil & Gas Leasing Program, 2007-2012 Programmatic Environmental Impact Statement, page V-64 (MMS April 2007), available online at <http://www.boem.gov/Oil-and-Gas-Energy-Program/Leasing/Five-Year-Program/2007-2012-Draft-Environmental-Impact-Statement.aspx> .

<sup>13</sup> 75 FR 49759, 49795 (Aug. 13, 2010), available online at <http://edocket.access.gpo.gov/2010/2010-19962.htm> .

<sup>14</sup> BOEM DEIS for GOM EPA, Page 2-22 (emphasis added). The DEIS is available online at <http://boem.gov/Environmental-Stewardship/Environmental-Assessment/NEPA/nepaprocess.aspx> .

<sup>15</sup> DSEIS, page 4-17 (emphasis added), at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf) . See also page IV-16, which explains that “Finneran and Jenkins (2012), which describes the new weighting functions, is included here as Appendix B”).

This Appendix B memo is entitled “APPENDIX B Criteria and Thresholds for U.S. Navy Acoustic and Explosive Effects Analysis.”<sup>16</sup> It states at page 2 that it does not apply to “criteria and thresholds for pile driving and airguns.” This Appendix B discussion of Navy sound explains that

“Sounds produced from naval activities can be divided into seven categories: (1) Sonars and other active acoustic sources; (2) Explosive detonations; (3) Ship noise; (4) Aircraft noise; (5) Gunfire and other launch noise; (6) Pile driving; and (7) Airguns. This report summarizes the criteria and thresholds for marine mammals and sea turtles exposed to underwater explosive detonations and sonars and other acoustic sources. **Pile driving and seismic airguns, although impulsive sources, lack the potential for shock wave generation and are therefore not treated as explosives, but rather rely on unique criteria and thresholds agreed upon by Navy and NMFS. The criteria and thresholds for pile driving and airguns are therefore not included in this document.**”<sup>17</sup>

NMFS and the Navy continue to use and do not propose any change in the current acoustic criteria for seismic airguns and piledriving: “Existing NMFS criteria was [sic] applied to sounds generated by pile driving and airguns (Table 16).”<sup>18</sup> These existing criteria are the historical and current levels of 120, 160 and 180 dB that are also used to regulate oil and gas seismic.<sup>19</sup> The current record does not contain sufficient data to address changes in the Level B criteria.

And, once again, the Appendix B “technical memo” does not even mention MarVib.

Consequently, the DSEIS is inaccurate and misleading when it states or suggests that the Appendix B “technical memo” supports or explains the new Level A physical harm criteria that NMFS is considering for seismic, MarVib and other oil and gas operations.

These inaccurate and misleading statements and suggestions violate NMFS’ IQA Guidelines.<sup>20</sup>

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<sup>16</sup> Appendix B is available at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol3.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol3.pdf) .

<sup>17</sup> DSEIS, Appendix B, page 2 (emphasis added), at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol3.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol3.pdf) .

<sup>18</sup> Navy Draft Atlantic Fleet Training and Testing EIS/OEIS, page 3.4-112 (May 2012), at [http://aftteis.com/Portals/4/aftteis/DEIS/Section/03.04\\_AFTT\\_DEIS\\_Marine\\_Mammals.pdf](http://aftteis.com/Portals/4/aftteis/DEIS/Section/03.04_AFTT_DEIS_Marine_Mammals.pdf) .

<sup>19</sup> See Table 16 at <https://www.federalregister.gov/articles/2013/01/31/2013-01817/takes-of-marine-mammals-incident-to-specified-activities-us-navy-training-and-testing-activities> .

<sup>20</sup> The NOAA/ NMFS IQA Guidelines are available online at <https://grunt.sefsc.noaa.gov/iqa/> and at [http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html).

### **III. The Current Record is too Vague and Incomplete to Allow Comment on any Changes to Level B Behavioral Effects**

NMFS has not published new numerical criteria for level B behavioral effects. However, NMFS has published in the DSEIS a discussion of a new approach/methodology for assessing Level B Behavioral effects that NMFS is considering for oil and gas operations. This discussion only applies to seismic (pulsed/impulsive). It does not apply to MarVib or to any other non-pulsed/non-impulsive sounds.<sup>21</sup>

NMFS does not propose any specific numbers for changes to the current 160 dB acoustic criterion for Level B behavioral Takes. However, NMFS does state in the DSEIS that it is

“exploring additional methods of augmenting the use of a dose-response-like curve to address contextual factors beyond received level (such as distance from the sound or behavioral state of the animal), as well as the more chronic effects of sound sources operated over longer periods of time.

Currently, based on the limited data available and what it suggests is appropriate, NMFS plans to have different basic acoustic thresholds for mysticetes, odontocetes, and pinnipeds, with the recognition that sometimes there may be sufficient data to suggest that a species within one of those groups is ‘sensitive’ and should have different (lower) acoustic threshold.”<sup>22</sup>

NMFS has not provided enough specifics and detail to allow informed comment at this time on changes to Level B behavioral effects acoustic criteria. However, we must note and agree with NMFS’ apparent acknowledgment in the following DSEIS passage that the “predicted take numbers” do not necessarily have “biological significance” for either “individuals or populations”:

“So, while these revisions could notably change predicted take numbers in some cases, we would not necessarily change our analyses (i.e., the analysis contained elsewhere in this Supplemental DEIS) of the biological significance of the increased total takes on the individuals or populations. The analysis of the potential health and fitness impacts of the expected take, or the population level impacts, includes consideration of the life history of the affected species, their behavioral patterns and distribution within the action area, the duration, season, geographic scope, and operational parameters of the expected activities, along with the potential implementation of multiple mitigation measures intended to minimize the intensity of the affects – and these analyses are not notably changed by the likely modification of predicted harassment take numbers.”<sup>23</sup>

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<sup>21</sup> See Pages 4-13 to 4-14, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf).

<sup>22</sup> Page 4-15, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf).

<sup>23</sup> Page 4-16, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf).

We also note that the current Level B acoustic criteria appear to be adequately protective. The Navy and NMFS use the 160 dB for Navy airguns, and the Navy cannot find any evidence of behavioral effects from its operations.

For example, the Navy's DEIS for its Atlantic Take rules states, "Results from two years (2009–2010) of intensive monitoring by independent scientists and Navy observers in Southern California Range Complex and Hawaii Range Complex have recorded an estimated 161,894 marine mammals with no evidence of distress or unusual behavior observed during Navy activities. Continued monitoring efforts over time will be necessary to begin to evaluate the long-term consequences of exposure to noise sources."<sup>24</sup>

NMFS and the Navy emphasize the lack of any observational data showing harm from Navy sound: *e.g.*,

- At page 7115 of its Federal Register notice of the proposed Navy Atlantic Take rules, NMFS explains, "The Navy has submitted reports from more than 60 major exercises conducted in the HRC and SOCAL, and off the Atlantic Coast, that indicate no behavioral disturbance was observed."<sup>25</sup>

- At pages 148-150, the Navy's application for the proposed Atlantic Take rules states that "no observable behavioral disturbance, injury, or mortality was noted" during Navy operations over the last few years.<sup>26</sup>

NMFS should develop a record of the costs and benefits of any change in the current Level B acoustic criteria before NMFS tries to change those criteria. That may be difficult to do because there doesn't seem any harm under the current criteria.

We assume that the following limitation on MMPA Level B behavioral effects would apply to any new acoustic criteria:

"The harassment status of slight behavior disruption has been addressed in workshops, previous actions, and rulings (National Oceanic and Atmospheric Administration 2008). The conclusion is that a momentary behavioral reaction of an animal to a brief, time-isolated acoustic event does not qualify as MMPA Level B harassment. This analysis uses behavioral criteria to predict the number of animals likely to experience a significant behavioral reaction, and therefore an MMPA Level B harassment."<sup>27</sup>

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<sup>24</sup> Navy DEIS, page 3.4-100 to 101, at [http://aftteis.com/Portals/4/aftteis/DEIS/Volume/AFTT\\_DEIS\\_Volume2\\_20120419.pdf](http://aftteis.com/Portals/4/aftteis/DEIS/Volume/AFTT_DEIS_Volume2_20120419.pdf).

<sup>25</sup> <http://www.gpo.gov/fdsys/pkg/FR-2013-01-31/pdf/2013-01817.pdf>.

<sup>26</sup> [http://www.nmfs.noaa.gov/pr/pdfs/permits/aftt\\_navy\\_loa\\_application2012.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/aftt_navy_loa_application2012.pdf).

<sup>27</sup> Navy Atlantic DEIS, page 3.4-121, at [http://aftteis.com/Portals/4/aftteis/DEIS/Volume/AFTT\\_DEIS\\_Volume2\\_20120419.pdf](http://aftteis.com/Portals/4/aftteis/DEIS/Volume/AFTT_DEIS_Volume2_20120419.pdf).

We also commend NMFS for its use of line transects to estimate takes.<sup>28</sup> Line transect should continue to be used for this purpose instead of flawed models.

#### IV. Any New Acoustic Criteria Must Be “Practicable”

The MMPA requires that mitigation measures, like safety radii and other requirements based on acoustic criteria, must be “practicable.”<sup>29</sup>

NMFS recently explained this requirement in the context of an arctic oil and gas seismic permit:

*“Mitigation Conclusions*

NMFS has carefully evaluated the applicant’s proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another:

- The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals;
- The proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and
- The practicability of the measure for applicant implementation.”<sup>30</sup>

Any criteria that are not practicable for a particular activity cannot be applied to that activity--and an MMPA authorization must be granted for that activity--so long as the MMPA’s “incidental,” “small numbers,” and “negligible impact” requirements are met, and so long as the applicant applies practicable mitigation measures. The relevant text of the MMPA reads as follows (*emphasis added*):

“(5)(A)(i) Upon request therefor by citizens of the United States who engage in a specified activity (other than commercial fishing) within a specified geographical region, the Secretary *shall* allow, during periods of not more than five consecutive years each, *the incidental, but not intentional, taking by citizens while engaging in that activity* within that region of *small numbers of marine mammals of a species or population stock* if the Secretary, after notice (in the Federal Register and in newspapers of general circulation, and through appropriate electronic media, in the coastal areas that may be affected by such activity) and opportunity for public comment—

(I) finds that the total of such taking during each five-year (or less) period concerned will

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<sup>28</sup> Arctic DSEIS, pages 4-15, 4-18, at

[http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf).

<sup>29</sup> See <http://www.nmfs.noaa.gov/pr/permits/incidental.htm> for NMFS’ discussion of the “practicability” requirement.

<sup>30</sup> 77 FR 73434, 73444 (Dec. 10, 2012), at <http://www.gpo.gov/fdsys/pkg/FR-2012-12-10/pdf/2012-29740.pdf>.

have a *negligible impact on such species or stock and will not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses* pursuant to subsection (b) of this section or section 1379 (f) of this title or, in the case of a cooperative agreement under both this chapter and the Whaling Convention Act of 1949 (16 U.S.C. 916 et seq.), pursuant to section 1382 (c) of this title; and

(II) prescribes regulations setting forth—

(aa) *permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat*, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for subsistence uses; and

(bb) requirements pertaining to the monitoring and reporting of such taking.<sup>31</sup>

NMFS should always address, demonstrate and document the practicability of any acoustic criteria that the Service is considering.

## **V. NMFS Should Carefully, Expressly and Transparently Consider The Effect of Any New Acoustic Criteria on Marine Vibroseis**

Any new acoustic criteria should be carefully reviewed for their impact on MarVib, which is a promising new technology that may supplement but will never replace seismic airguns.

A recent environmental assessment of MarVib explains:

“For purposes of this assessment, marine seismic surveys with future-generation MarVib systems are assumed to differ from airgun-based surveys in several major ways. • The sound signal transmitted at or near each grid location (“shotpoint”) is expected to be longer in duration (seconds vs. 10s of milliseconds for an airgun pulse) but will have a substantially lower source pressure level. • Total acoustic energy transmitted at each location may be similar to that with airguns, or perhaps somewhat reduced if the necessary geophysical data can be recovered from a lower-energy signal through enhanced signal processing possible with MarVib. (Most of the conclusions in this assessment make the precautionary assumption that total transmitted acoustic energy per location will be similar to that with airguns. If a lower source energy level can be used, this would further reduce the environmental effects.) • The rise time of the MarVib signals will be slower than that of airgun pulses, and MarVib signals will be “non-pulse” whereas airgun signals are impulsive, at least near the source. • As noted above, a major design goal for MarVib, as compared to airguns, is a faster decrease (roll-off) in source spectrum levels at frequencies above ~100 Hz or, if possible, above a somewhat lower

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<sup>31</sup> MMPA , Section 101, at <http://www.nmfs.noaa.gov/pr/laws/mmpa/text.htm#section102> .

inflection point. This would substantially reduce the biological effects, particularly on species that are most sensitive to higher frequency sounds and not very sensitive to low-frequency (LF) sounds, e.g., the odontocete cetaceans.”<sup>32</sup>

This MarVib Assessment further explains that

“The sound signals expected to be emitted by next-generation MarVib systems will differ in important ways from airgun signals. Differences include being non-pulse rather than impulsive in character, having reduced peak pressure but increased signal duration and probably increased duty cycle, and having well controlled spectral properties.

*Non-Pulse Signals:* This is expected to be an important mitigating factor inherent to MarVib sources. As a result, marine mammals should tolerate exposure to higher cumulative energy levels from MarVib than from airguns before auditory impairment would be expected. The same is probably true for at least some other types of marine animals. Southall et al. estimated that the cumulative energy exposure would need to be ~17 dB higher with non-pulse than with impulse sound before PTS (auditory injury) would occur.”<sup>33</sup>

The MarVib Assessment modeled potential PTS and TTS from MarVib in the Gulf of Mexico, and concluded

“The specific distances out to which TTS or PTS might extend would depend on the circumstances. However, for the MarVib scenarios in the northern Gulf of Mexico examined in this assessment (§ 6.2.6.3), PTS would be limited to very close distances, if it occurs at all, and the number of individual animals that might incur PTS would be very small or zero. In the modelled scenarios, PTS is expected in <1 individual of each of the three representative species that were considered (sperm whale, bottlenose dolphin, Bryde’s whale). In an actual seismic survey in which • some animals avoid the approaching seismic source and • real-time mitigation measures are implemented, even fewer cases of hearing impairment would be expected.

It has not been demonstrated that, in realistic field conditions, a MarVib source (or airguns) would cause TTS or PTS in any type of marine animal. For cetaceans and perhaps pinnipeds, it can be inferred from available data that TTS and (less likely) PTS might occur in the occasional animal that is very close to a MarVib source during at least one transmission. For sea turtles, fish, and invertebrates, it is unknown whether these auditory effects could occur in animals close to a MarVib source. If hearing impairment is possible, it would be limited to close distances. In the case of benthic-dwelling

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<sup>32</sup> Environmental Assessment of Marine Vibroseis, LGL Ltd. and Marine Acoustics Inc, (April 2011) (“MarVib Assessment”), page viii, at [http://www.soundandmarinelife.org/Site/Products/EA%20of%20MarVibr-LGL&MAI-20Apr'11\(final\).pdf](http://www.soundandmarinelife.org/Site/Products/EA%20of%20MarVibr-LGL&MAI-20Apr'11(final).pdf).

<sup>33</sup> *Id.*, page xii.

animals, this would mean that these theoretical auditory effects would only be possible in shallow water or if the source were towed close to the bottom.”<sup>34</sup>

Consequently, there is no rational basis for using revised acoustic criteria that would impede use of MarVib. In order to ensure that this does not happen, NMFS should expressly address MarVib in any proceeding to consider new acoustic criteria. The public should have notice of and an opportunity to comment on this proceeding. The record for this proceeding should be transparent, and the proceeding should comply with IQA Guidelines.<sup>35</sup>

Of course, these same requirements should apply to any and all proceedings to consider new acoustic criteria.

## **VI. NMFS Needs a New ICR before NMFS Can Implement New Acoustic Criteria**

NMFS emphasizes that it intends to significantly change the acoustic criteria that it has historically used. See page 4-13, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf).

Such a significant change would require a new ICR to implement the changed information collection requirements. BOEM has already acknowledged the need for a new ICR for any change in acoustic criteria. There is no difference between NMFS and BOEM in this respect.<sup>36</sup>

## **VII. Peer Review Should Comply with OMB Peer Review Bulletin**

NMFS emphasizes that there will be peer review and another opportunity for public comment before NMFS changes its historical acoustic criteria (*i.e.*, 190/180/120 dB) and starts using new criteria.<sup>37</sup>

Peer review should comply with the OMB Peer Review Bulletin, and the public should be involved in peer review of any new criteria.<sup>38</sup>

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<sup>34</sup> *Id.*, page X.

<sup>35</sup> For example, NMFS and BOEM have announced their intent to assess MarVib for use in the Gulf of Mexico.

<sup>36</sup> See CRE comments at pages 5-6, <http://www.thecre.com/creipd/wp-content/uploads/2009/06/CRE-Comments-on-BOEM-Draft-EIS-for-OCS-Lease-Sales-225-and-226.pdf>, for a discussion of the BOEM ICR. These previous CRE comments are incorporated by reference herein.

<sup>37</sup> See Pages 4-13 to 4-14, at [http://www.nmfs.noaa.gov/pr/permits/eis/arctic\\_sdeis\\_vol2.pdf](http://www.nmfs.noaa.gov/pr/permits/eis/arctic_sdeis_vol2.pdf).

<sup>38</sup> <http://www.whitehouse.gov/sites/default/files/omb/memoranda/fy2005/m05-03.pdf>.

## VIII. Peer Review Should Determine CREM Compliance and IQA Compliance

Peer review should determine CREM compliance for all models used in any new criteria, like NMFS and Navy did for the AIM model.<sup>39</sup>

Peer review should also determine compliance with NMFS' IQA Guidelines.<sup>40</sup>

On April 30, 2013, the National Academy of Sciences released a major report on assessing risks to species under the Endangered Species Act ("ESA").<sup>41</sup> The NAS prepared this report at the request of NMFS, EPA, FWS, and the U.S. Department of Agriculture. This NAS Report provides the model for all ecological risk assessments.

CRE's comments in this proceeding briefed the NAS on the four agencies' IQA Guidelines. After receiving and reviewing CRE's comments, the NAS published a report which states at page 31 that "all federal agencies are expected to comply with the Office of Management and Budget (OMB) guidelines on objectivity, utility, and integrity of disseminated information":

"OMB (67 Fed. Reg. 8452 [2002]) describes those attributes as follows:

'Objectivity' focuses on the extent to which information is presented in an accurate, clear, complete and unbiased manner; and, as a matter of substance, the extent to which the information is accurate, reliable and unbiased. 'Utility' refers to the usefulness of the information to the intended users. 'Integrity' refers to security, such as the protection of information from unauthorized access or revision, to ensure the information is not compromised through corruption or falsification.

The Services and EPA (EPA 2002; FWS 2007) have separately published information quality guidelines (IQGs) that follow closely the government-wide OMB guidelines. Similar basic principles for achieving a scientifically credible assessment are prescribed in the IQGs from the agencies; the agencies are committed to ensuring the quality of evaluations and the transparency of information from external sources used in their disseminated assessments and actions (EPA 2003; NMFS 2005). They also recognize that a high level of transparency and scrutiny is needed for influential information that is expected to

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<sup>39</sup> [http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa\\_aim\\_review.pdf](http://www.nmfs.noaa.gov/pr/pdfs/permits/lfa_aim_review.pdf).

<sup>40</sup> The NOAA/ NMFS IQA Guidelines are available online at <https://grunt.sefsc.noaa.gov/iqa/> and at [http://www.cio.noaa.gov/services\\_programs/info\\_quality.html](http://www.cio.noaa.gov/services_programs/info_quality.html).

<sup>41</sup> *Assessing Risks to Endangered and Threatened Species from Pesticides* ("NAS Report"), pages 6, 31, 34, available online at <http://www.thecre.com/forum1/?p=6116>.

CRE submitted written comments to the NAS during its review and report preparation. CRE's comments to the NAS are available online at <http://www.thecre.com/forum1/?p=4569>.

have a substantial effect on policies and decisions (EPA 2002; NMFS 2004; FWS 2007) [citing the Agencies' DQA Guidelines]."

The NAS report at page 34 provides the following additional guidance on data quality:

- “● Given that stakeholders are aware of and can provide valuable and relevant data, the committee encourages provision for their involvement at the early stage and throughout the ERA process. Stakeholder data are expected to meet the same data relevance and quality standards as all other data.
- To ensure that the best data available are used, information should first be screened for relevance and then subjected to quality review.
- The agencies should, at a minimum, subject all information to a review based on OMB criteria of ‘objectivity, utility and integrity.’ Information sources that fail any of the criteria can be used at the discretion of the risk assessor, provided that their limitations are clearly described.
- Comparisons of all information sources with the relevance and quality attributes should be documented in the risk assessment and described in the overall characterization of uncertainties.”

NMFS should follow and document compliance with the NAS Report, OMB's Information Quality Guidelines and NMFS' own IQA Guidelines when considering any acoustic criteria changes and when developing a final SEIS for the Arctic.

As noted above, the DSEIS violates IQA Guidelines when it states that the considered Level A acoustic criteria are supported and explained by the Appendix B “technical memo.” Those statements are inaccurate and misleading.

Finally, CRE has prepared a Memorandum entitled “The State of Seismic Regulation in the Gulf of Mexico,” which discusses in detail the Government's long-standing and successful regulation of seismic in the Gulf of Mexico. We believe that this Memorandum's conclusions and observations are also relevant to the Government's regulation of seismic in the Arctic. Consequently, we incorporate this Memorandum by reference into our comments on the Arctic DSEIS.<sup>42</sup>

We thank you for the opportunity to submit these comments, and we look forward to NMFS' response to them.

#### **THE CENTER FOR REGULATORY EFFECTIVENESS**

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<sup>42</sup> This Memorandum is available online at [http://www.thecre.com/forum13/wp-content/uploads/2013/03/State\\_of\\_Marine\\_Sound\\_Regulation1.pdf](http://www.thecre.com/forum13/wp-content/uploads/2013/03/State_of_Marine_Sound_Regulation1.pdf), and it is incorporated herein by reference. This Memorandum is also available at CRE's interactive website *The Regulation of Seismic Exploration in the United States*, at <http://www.thecre.com/forum13/>.