

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

BOEM's Scoping Meeting on
The Development of an EIS
Held in Galveston, Texas
June 17, 2013

Court Reporter: Rhonda Russo, CSR

1 (6:31 p.m.)

2 MR. GOEKE: Good evening. We're going to
3 go on the record, please. My name is Gary Goeke. I'm
4 the chief of the Environmental Assessment Section with
5 the Bureau of Ocean Engineer Management in New Orleans.
6 I'm fighting a cold as you can no doubt hear. So, if my
7 voice squeaks out every now and then, please bear with
8 me.

9 Sitting with me this evening is Andrea
10 Heckman. Andrea is one of our staff in New Orleans
11 working on the document that we're going to be discussing
12 tonight, and we have a number of other BOEM employees who
13 are around this evening.

14 And let me tell you I appreciate y'all
15 coming out this evening. This is the best turnout that
16 we've had. As you can see from the schedule that we have
17 up on the screen, we've been traveling quite a bit
18 lately. We've had relatively light turnout. This is the
19 best turnout we've had, and I appreciate all of you
20 coming out this evening.

21 Andrea is going to run the projector
22 for me because we found out that our little remote is not
23 quite as reliable as we wish it was.

24 All right. Andrea, let's get started.

25 We are here this evening to talk about

1 the preparation of an EIS for geological and geophysical
2 activities in the Gulf of Mexico. There are two agencies
3 involved -- the Bureau of Ocean Energy Management, which
4 our -- which we represent primarily and as you can see up
5 here we have the mandate that our agency has and some of
6 our primary purposes. And the other -- we have a co-lead
7 with us this evening. Working on the EIS is National
8 Marine Fishery Service. National Marine Fishery Service
9 will use some of the information that we are going to
10 publish in the document to help fulfill the obligations
11 that their agency has.

12 This is the BOEM's Congressional
13 mandate. The agency, although we are moderately new,
14 we've been around for a while in the former agency,
15 Minerals Management Service. So, while our agency has
16 only been here for a couple of years, we do have
17 authorities that date back to 1954.

18 What we're going to be talking about is
19 the preparation of an environmental impact statement.
20 EIS's are built under the auspices of the National
21 Environmental Policy Act, also known as NEPA; and we
22 generally refer to it as NEPA. NEPA is the act that
23 created the mandate for Federal agencies to work and
24 create a systematic evaluation of their proposed
25 actions.

1 The development of an EIS is a fairly
2 lengthy process. We're anticipating that it will take a
3 couple of years, two to two and a half years, to create
4 the document that we're here to discuss tonight. We're
5 at the very beginning of this process known as the
6 scoping process; but the EIS has many steps. We lay out
7 all of these different issues in a step-wise fashion, and
8 one by one we step through these processes.

9 We are at the very beginning of this
10 two-and-a-half year process here. The very first part of
11 the process is to prepare what's known as a notice of
12 intent to prepare an EIS. That is something where we --
13 that we publish in the Federal register, we put out
14 information, and we let everybody know that we're going
15 to be preparing the document and what the topic is.

16 Generally we identify just a topic; and
17 the purpose of the scoping meeting, which is where we are
18 now -- the purpose of the scoping meeting is to define
19 the nature and the scope of the EIS that we're going to
20 be addressing, and that's what we're looking and we're
21 seeking comments for from everyone on how big the EIS is
22 and what the issues are that we should cover.

23 So, that's why we're here tonight, to
24 receive comments from anyone who may be interest, to
25 receive comments on what your thoughts may be as to the

1 nature of the document, some of the various things that
2 we examine in our document, and we're going to step
3 through this and I'm going to try and give you a little
4 bit of information about how we do this and some of the
5 different things we look at to sort of get your thoughts
6 on those.

7 One of the things that everybody needs
8 to understand is our agency is one agency that works on
9 the Outer Continental Shelf and there are a lot of
10 required consultations under NEPA. The National
11 Environmental Policy Act is an umbrella law that tells us
12 you have to consider all of the applicable Federal laws,
13 and you have to do consultations with all of the
14 different agencies. This deals with everywhere from the
15 Marine Mammal Protection Act, the Coastal Zone Management
16 Act, Endangered Species, Tribal Consultations, a whole
17 variety of things. So, you can imagine that it takes
18 quite a bit of time to step through these processes.

19 But the topic that we're really here to
20 talk about tonight is seismic surveys and the creation of
21 an EIS looking at seismic surveys. This is a cartoon
22 sketch that sort of gives a rough idea of what a seismic
23 survey is. In real simple terms, a seismic survey is
24 putting an impulse of energy into the water that travels
25 through the water, reflects off the sea floor and travels

1 back up to different sets of receivers. And by the speed
2 of the sound and the conditions of the water, the
3 conditions of the sea floor, we can draw a picture. We
4 can get an idea of the types of sediments and
5 stratigraphy under the sea floor.

6 There are four primary purposes in the
7 Gulf of Mexico for why seismic operations are performed.
8 In oil and gas, seismic is obviously very important for
9 locating and identifying potential sources and traps of
10 petroleum products.

11 In the biological resource and
12 submerged culture identification, there are a lot of
13 seismic testing that we can use to remotely set up sea
14 floor types to determine whether they're hard sea floors,
15 whether they may have the potential for chemosynthetic
16 and a number of other things like corals and things like
17 this.

18 We also use seismic actions for
19 renewable energy. One of the things that you have to
20 think about is if you're going to be setting up a wind
21 farm and say you are putting 300 towers in the sea floor,
22 you need to know that you have a stable, solid sea floor
23 to put your monopiles into. So, the seismic is important
24 in that.

25 And also, for marine minerals

1 investigations. When we have hurricanes that move
2 through, when we have coastal erosion in Louisiana, when
3 we have a variety of things that we use offshore minerals
4 to renourish the beach or to build dune systems or when
5 super storm Sandy comes through, these are the types of
6 things that we use seismic to locate sand resources so
7 that we can go in and help restore the beaches.

8 There are a bewildering variety of
9 G & G types of activities as we have folks in the
10 audience who can attest to this. It is -- and our EIS
11 it's going to be an -- it's going to be a job to try and
12 tease things apart, to address them individually but to
13 address them -- lump them together and things like this.
14 Some of these are dramatically different -- in
15 geophysical and in geological, some of these are
16 dramatically different from each other so that we need to
17 be able to put them together, the ones that have similar
18 types of potential impacts.

19 And there are some of things that have
20 very low impacts; but we're going to list them all, we're
21 going to step through them in a step-wise fashion and
22 make sure that we address them all.

23 The area of interest for our EIS that
24 we're going to be putting together is the entire northern
25 Gulf of Mexico. Our agency has responsibilities on the

1 entire Outer Continental Shelf; and if you follow the
2 white line all the way around, that's the area that we're
3 going to be following. Now, National Marine Fisheries,
4 of course, has responsibilities that go inside into state
5 waters. So, our agency has only authorizations on -- in
6 the Federal waters; but National Marine Fisheries has
7 them up in the coastal waters. So, the EIS will go
8 closer to shores than most of our documents have in the
9 past.

10 The purpose of the EIS is to assess the
11 potential environmental effects of the
12 geological/geophysical survey techniques that are used on
13 the Outer Continental Shelf. As I said, this is going to
14 take a while; and we have -- we have been doing
15 environmental impact statements for a number of years.
16 So, we have an idea of the resources that we're going to
17 be looking at. We have a good idea of what the potential
18 impacting factors may be. So, I want to step through
19 those for you and get your thoughts and see if you have
20 any reaction to those types.

21 The need for the programmatic as I
22 mentioned before, BOEM has an obligation to permit G & G
23 activities and NMFS through their Incidental Take
24 Authorizations also has requirements on the Outer
25 Continental Shelf; and this is the purpose for the EIS.

1 These are the resources that we have
2 routinely analyzed for oil and gas activities in the Gulf
3 of Mexico. We have a long list of resources that covers
4 everything from the very near in-shore to the very deep
5 waters, everything from potentially sensitive Benthic
6 communities far offshore, near-shore archaeological
7 resources, water air quality, coastal and marine birds.
8 And the way you write an EIS is you go through and you
9 describe all of these resources systematically and then
10 you take the potential impacting factors -- and this is
11 the short list. You take the potential impacting factors
12 and you lay them up against the resources that you just
13 described and go through what the potential impacts may
14 be.

15 So, these are some of the impacting
16 factors that we tentatively identified that may have some
17 relationship to the geological or geophysical techniques
18 that are going to be used. We're going to look at
19 everything from the active sound sources, we're going to
20 look at air emissions on the ships that are used, we're
21 going to look at sea floor disturbances.

22 And what we're looking for is down
23 here. We're looking for people who are knowledgeable,
24 people who can tell us, you know, this is a pretty good
25 list. You covered most everything but you may have

1 forgotten this or this. And those are the type of
2 comments that we love to get from y'all tonight.

3 One of the things you do as you go
4 through creating an EIS is you look at the alternatives.
5 We have a proposal on the table. The proposal is to
6 allow oil and gas and seismic and the alternative energy
7 and all these G & G activities to move forward if we meet
8 certain criteria, if we do the -- if we get the permits
9 and things like that; but we have to look at other
10 alternatives. And one is known as the no action
11 alternative.

12 No action alternative is where you
13 don't allow the alternative to happen, and you look at
14 the impacts. If you say we understand your proposed
15 action but we're not going to allow it to happen, let's
16 see what happens then. And then there are, of course, as
17 you can imagine with the variety of geophysical tools
18 that are available, the variety of resources that we're
19 looking at, there's a number of other alternatives that
20 we can put together.

21 A lot of them are sort of gradient.
22 You know, pick a point inside the gradient and you look
23 at whether we may want to consider -- look at whether we
24 may want to look at different types of exclusions zones.
25 Maybe we want to consider different types of marine

1 species observers offshore, maybe we have different types
2 of separation distances for concurrent surveys and things
3 like that. These are the types of alternatives that
4 we're looking at. These are the types of things that
5 we're looking to get your thoughts on.

6 If there's something on here -- these
7 are the example of the mitigation measures that we will
8 likely look at in our EIS; but if there's some other
9 thing that we're not catching, if there's something else
10 that y'all are seeing that we're not seeing, this is what
11 we'd like to hear. And we don't for a second believe
12 that we've thought of everything that needs to be thought
13 of. And so, we want the general public, we want all the
14 knowledgeable folks to help us define all of these
15 issues.

16 This is the schedule that we're dealing
17 with at this point. It's going to take quite a while to
18 get this done. We're looking at a record of decision in
19 mid to late 2015 but the bold red is the areas where we
20 have opportunities for public comment and we would like
21 the public to join, we would like the public to become
22 part of the process. We would like very much to get your
23 thoughts on the types of analyses that we're doing, what
24 the resources are, what the alternatives are.

25 So, we have -- at the notice of intent

1 that we've already passed, we have a public comment
2 period. We have scoping meetings that we're going
3 through now. In the middle -- somewhere around the
4 mid-2014, we're going to publish the draft document. We
5 would love everybody to be able to read the draft
6 document, give us comments on the document and tell us
7 what your thoughts are.

8 When that draft document comes out in
9 the middle of 2014, we will do public hearings like this
10 all over again. We will go around probably to the same
11 sites that we've done our scoping on. We will hold
12 meetings just like this to ask for your comment and your
13 thoughts on the draft document that we've published. And
14 then, hopefully by early to mid-2015 we'll have a final
15 document that incorporates all the comments that we've
16 gotten, that incorporates the helpful stuff, and go
17 forward from there.

18 So, what we're going to do, we have a
19 station set up as you can see. We're going to ask
20 anybody who wants to speak. We've had, I believe, three
21 speakers who have previously signed up. We had three
22 speakers who have signed up and expressed an interest in
23 speaking. We have three minutes, but we've got a lot
24 longer than that. So, I'm not going to hold anybody; and
25 we're not going to jump up and stop you if you hit three

1 and a half minutes.

2 But let me cover a couple of other
3 things first. We do have lots of ways for you to send in
4 information. If you have thoughts -- after tonight if
5 you have thoughts that you said, "You know what, I didn't
6 see them cover this" or "that guy said something that
7 really made me think about this," you have until July 9
8 and you have a number of different ways of getting in
9 touch with us. Perhaps the simplest is just this
10 simplest little e-mail, gomggeis@boem.gov.

11 But we also have other sites, one at
12 regulations.gov; or you can just send me a letter by
13 snail mail, any of these ways. I think my own phone
14 number is out there on some of this as well. So, you can
15 call us and I will hand you to Andrea and Andrea can take
16 your comment.

17 MS. HECKMAN: I'll be happy to help you.

18 MR. GOEKE: Also, there is quite a bit of
19 information. Andrea and her crew have worked very hard
20 at putting together information on the web site out
21 here. I would urge you if you're interested and you
22 really would like to know what is happening with this EIS
23 and to track it and make sure that you're getting the
24 latest information, this is the site, BOEM.GOV. And
25 again, it's just gomgg. This has the programmatic EIS on

1 it.

2 And here's how you join our mailing
3 list. I think most people have gotten copies of this
4 scoping presentation. So, you have hard copies of how to
5 get on our mailing list. We'd encourage you to do this.
6 This is how we really try to get information from folks,
7 and this is how we want to make sure that we keep in
8 touch with everybody.

9 So, what we're going to do with that
10 pretty picture up on the screen is we are going to go
11 ahead is start up. And the first speaker is Bob
12 Rosenblatt. Bob, did you want to speak to us?

13 MR. ROSENBLADT: Yeah, please. Hi, I'm Bob
14 Rosenblatt; and I'm very glad to be here. I'm
15 representing Shell E & P Corporation. I'm team lead for
16 the geophysical operations team. We're responsible for
17 acquiring seismic for Shell in the western hemisphere.

18 Thanks for the opportunity to speak
19 today about the scoping of this draft programmatic
20 environmental impact statement. We're very pleased that
21 BOEM and NMFS are moving forward with this PEIS which
22 will support the issuance of regulations and permits to
23 conduct geological and geophysical study activities in
24 the Gulf of Mexico.

25 Shell is one the largest lease holders

1 in the Federal OCS waters and one of the largest
2 producers of oil and natural gas in the OCS. We're a
3 technology leader in the deep water Gulf of Mexico and
4 depend on the state of the art seismic imaging to find
5 and develop oil and gas resources.

6 These resources are hard to find, often
7 hiding behind subsurface salt domes, which obscure the
8 seismic record. Shell has worked with our contractors,
9 universities, and our industry partners to develop new
10 advances in seismic technology that not only have a
11 better chance of finding oil and gas accumulations but
12 also minimize the environmental footprint.

13 This PEIS is a needed first step to
14 begin the process of generating the data that will allow
15 for additional production in the central and western Gulf
16 and the potential for future discoveries in the eastern
17 Gulf should that area be made available for leasing and
18 development in the future.

19 The offshore oil and gas industry has
20 demonstrated the ability to conduct seismic exploration
21 activities in a manner that protects marine life. Shell
22 has conducted seismic operations for decades in many of
23 the offshore provinces around the world. Most recently
24 we've conducted surveys in the Gulf of Mexico and in
25 Alaska. Our monitoring activities have shown that

1 there's been no injury to any marine mammal species.
2 Furthermore, there's no scientific evidence demonstrating
3 biologically significant adverse impacts on marine mammal
4 populations. Shell is a member of the OGP Sound and
5 Marine Life Joint Industry Program, which is conducting
6 research on the potential effects of seismic on marine
7 mammals.

8 We strongly believe that the PEIS must
9 be based on the best available science, make appropriate
10 use of allocated models to estimate incidental takes and
11 fully consider the environmental context when making any
12 determination of environmental effects on mitigation
13 measures.

14 Furthermore, any new mitigation
15 measures ordered in the PEIS must be tested in the real
16 world to ensure that they are practical and don't
17 unnecessarily restrain operations.

18 We appreciate the opportunity to
19 provide comments in this scoping process and look forward
20 to reviewing the draft PEIS. Thank you.

21 MR. GOEKE: Thank you. If you have written
22 comments, if you care to turn it in, it will help to make
23 sure we have an accurate representation of what you
24 said. That's fine. Thank you. Our second speaker,
25 Peter Seidel.

1 MR. SEIDEL: Good evening. This is going
2 to sound a little repetitious; but obviously more from
3 the geophysical standpoint rather than the oil company
4 standpoint. But my name is Peter Seidel. I'm with
5 the -- I'm with TGS NOPEC and the IAGC; and I'm here
6 today really representing the International Association
7 of Geophysical Contractors, which is the IAGC.

8 On behalf of the IAGC and the
9 geophysical industry, I wish to express our appreciation
10 for the opportunity to make the following comments which
11 will be supplemented by written comments regarding the
12 development of the PEIS for G & G activities in the Gulf
13 of Mexico.

14 The IAGC is the international trade
15 association representing the industry that provides
16 geophysical acquisition, processing and other services to
17 the energy industry, including both conventional and as
18 you mentioned earlier, the renewable energy sector. The
19 IAGC member companies play an integral role in the
20 successful operation in the development of offshore oil
21 and natural gas resources through the acquisition and
22 processing the geophysical data.

23 Just a few comments on why we -- the
24 value of geophysical data. Geophysical surveys are the
25 key tools used in oil and natural gas exploration and the

1 siting of renewable energy facilities. Our services are
2 critical to the development to the hydrocarbon resources
3 and are one of the very first tools used in exploration
4 process aiding E & P companies in their analysis and
5 identification of the most prospective areas for future
6 oil and natural gas exploration.

7 We're on the same page. Geophysical
8 data is also critical to the development of renewable
9 energy. High resolution and geophysical data and
10 geotechnical boring aids the siting and design of
11 renewable energy and facilities. Geophysical data is
12 also valuable to the Federal government and even to state
13 governments.

14 The BOEM utilizes data to assess the
15 resource potential of the OCS and ensures the Federal
16 government receives a fair market value for the
17 resource.

18 Having gotten geophysical data prior to
19 the lease sale allows industry to make a more informed
20 bid resulting in higher bids and actually more bids
21 promoting greater competition of accessibility to the GOM
22 exploration.

23 How the geophysical industry meets the
24 environmental challenges, modern geophysical imaging
25 reduces risk both economical and of exploration and

1 production but also associated safety and health risks.
2 It reduces the number of wells that need to be drilled in
3 a given area. So, reducing the overall exploration and
4 development and production footprint.

5 The modern geophysical imaging of today
6 is used more and more to protect drain risks that can
7 later be managed or even eliminated.

8 The geophysical industry's 50 years of
9 experience in the Gulf of Mexico planning, acquiring and
10 processing geophysical data in an environmentally
11 friendly and responsible manner. During that time there
12 has been no scientific evidence that our surveys have
13 resulted in a auditory or physical injury to a marine
14 mammal or have adversely impacted marine mammal
15 population.

16 Nevertheless, the industry employs a
17 number of robust mitigation measures to further reduce
18 the negligible risk of harm to marine mammals. It is
19 important to remember that seismic surveys are temporary
20 and transitory and use low frequency short duration shore
21 signals.

22 Though additional information is needed
23 to some areas, there's a significant amount of scientific
24 information available, many of it funded by government
25 agencies, regarding the potential effects of the E & P

1 activities on the marine environment. This information
2 and data from the scientific literature, and not
3 speculation, should be used when assessing potential
4 impacts of G & G activities on the environment.

5 A few comments regarding the
6 development of this draft PEIS. The ultimate considered
7 in the PEIS should only be based on scientific and/or
8 observed effects. And therefore, not include
9 overly-restrictive mitigation measures such as shut down
10 if a dolphin enters an exclusion zones, seasonal closures
11 and large arbitrary and impractical separation distances
12 between geophysical vessels. These are fortunately
13 mitigation measures that are not necessary to protect
14 marine animals.

15 In the past the BOEM has relied on
16 models and methodologies to estimate the number of marine
17 mammals incidental takes resulting in highly exaggerated
18 estimates, especially considering the lack of any
19 observable injuries, mortalities or population level
20 behavior effects.

21 Compounding this problem the agency's
22 previous take number estimates are only achievable by
23 using acoustic threshold criteria based on obsolete data
24 that does not meet the NEPA requirement to use the best
25 available science.

1 We strongly believe that the DPEIS must
2 be based on the best available science, make appropriate
3 use of models and methodologies to estimate incidental
4 takes and fully consider the environmental context when
5 making a determination for environmental consequences.

6 The IAGC values the stakeholder process
7 and are committed to participating in a dialogue with all
8 stakeholders to explain what we do, why we do it and the
9 measures we take to protect the environment.

10 And I have with me today some --
11 several educational items and CDs and some handouts which
12 I can -- where am I going to put these later?

13 MR. GOEKE: They can -- in the back.

14 MR. SEIDEL: Put them on the table in the
15 back. And these explain the modern geophysical data
16 acquisition, underwater sound and the measures the
17 geophysical industry implements to ensure minimal impacts
18 of our operation on the environment.

19 And again, the IAGC wishes to express
20 our appreciation for this opportunity to voice our
21 support and commitment to work with the BOEM and all
22 stakeholders in developing of the Gulf of Mexico PEIS.
23 Thank you very much.

24 MR. GOEKE: Thank you. Our third speaker
25 who signed up ahead of time, Joanie Steinhaus.

1 MS. STEINHAUS: Thank you.

2 MR. GOEKE: Did I get close to your name?

3 MS. STEINHAUS: Steinhaus.

4 MR. GOEKE: Okay. Thank you.

5 MS. STEINHAUS: All right. My name is
6 Joanie Steinhaus, and I represent the Sea Turtle
7 Restoration Project. So, I appreciate the opportunity to
8 address the panel tonight on the seismic surveys and
9 their impact on the marine environment in the Gulf of
10 Mexico and specifically the Kemp's Ridley Sea Turtle.
11 The Kemp's Ridley is listed as critically endangered
12 under the Endangered Species Act, and the population is
13 severely depleted and is considered the most endangered
14 sea turtle species. These sea turtles are long-lived and
15 have a long juvenile stage. This combined with many
16 threats from human activities in the Gulf water and on
17 land affects all stages of their live and they are the
18 reason for their high risk of extinction.

19 Most sea turtles spend a high
20 percentage of their life in the upper level of the water
21 column, less than 180 feet. The Kemp's Ridley turtles
22 transit between near shore and offshore waters within 50
23 miles from shore from spring/summer to fall/winter
24 coinciding with seasonal water temperature changes. The
25 near-shore Gulf of Mexico water serves as a prime

1 foraging habitat for post-nesting Kemp's Ridley Turtle,
2 adult migrating between breeding and foraging habitats,
3 and by post-hatchling and juveniles during early life
4 stages.

5 A recently published paper focused on
6 31 platform transmitter terminals there were deployed on
7 Kemp's Ridley turtles that nested at Padre Island
8 National Seashore and Rancho Nuevo over a 13-year period
9 between 1998 and 2011. The results of this study defined
10 critical foraging hot spots for this species and
11 specifically for post-nesting Kemp's Ridley turtles in
12 the northern Gulf of Mexico.

13 Consistent selection of this region by
14 turtles tracked from the Padre Island National Seashore
15 over a 13-year period, concentration of core-use foraging
16 area for turtles tracked from both Rancho Nuevo and Padre
17 Island and the high foraging area fidelity underscore the
18 importance of this habitat across time and for
19 individuals from the largest segment of the nesting
20 population the females at Ranch Nuevo.

21 The dispersion of foraging sites
22 indicates that a foraging corridor exists in the near
23 shore Gulf of Mexico waters and underscores the need for
24 international cooperation for conservation of this
25 imperiled species. Additional and continued tracking of

1 adult females from both Padre Island National Seashores
2 and Rancho Nuevo nesting beaches is warranted to further
3 delineate this corridor and to understand details of the
4 turtle behavior linked to foraging site selection, both
5 across the migratory pathway and the final foraging
6 site.

7 It is difficult in your information
8 that you have posted on line to locate the proposed
9 turbine sites or the number of turbines to be placed in
10 the Gulf, and the sound associated with the seismic
11 surveys produces pulse loud enough to disrupt and
12 disorient marine life.

13 Sea turtles appear to be low frequency
14 specialists with best hearing projected to occur between
15 the frequency range of 50 to 1000 hertz.

16 Based on the functional morphology of
17 the ear, it appears that sea turtles receive sound
18 through the standard vertebrate tympanic middle ear path;
19 and the sea turtle is well adapted to detect underwater
20 sound. The dense layer of fat under the tympanum acts as
21 a channel for underwater sound and the retention of air
22 in the middle ear, indicating sea turtles are able to
23 detect sound pressure.

24 We must adequately consider the
25 possibility that sound waves could seriously injure,

1 disrupt migration and feeding, disorient and even kill
2 sea turtles. We wish to know what measures will be taken
3 to ensure the sea turtles are protected from the negative
4 impact of the seismic activity in this project area.

5 Past projects have focused on beach surveys to identify
6 the nesting Ridley females but have failed to assess the
7 impact to other life stages. We believe seismic activity
8 should be conducted only in months when near shore waters
9 are cool and less likely to impact the sea turtles.

10 These months are November through March. Thank you for
11 allowing me this opportunity to address the panel.

12 MR. GOEKE: Thank you. I appreciate it.
13 That is all the speakers that we had that signed up
14 beforehand. What we are going to do, I'm going to ask to
15 see if there's anybody that wants to speak now; and if
16 so, come up, give us your name, your affiliation. Yes,
17 sir.

18 DR. LINTON: I want to ask a couple of
19 questions from your slide slow.

20 MR. GOEKE: You can ask. I don't know that
21 I can answer.

22 DR. LINTON: Well, I can certainly try. My
23 name is Tom Linton. I'm with Texas A & M University.

24 MR. GOEKE: Yes, sir.

25 DR. LINTON: And many, many years ago I

1 studied the effects of seismic exploration on a variety
2 of things.

3 MR. GOEKE: Okay. Well, let me stop you,
4 please. We're about to take a break. I think the best
5 thing is for us to have a discussion during the break.

6 DR. LINTON: I want to ask you two
7 questions. I don't want to discuss anything.

8 MR. GOEKE: Okay. All right.

9 DR. LINTON: There was a thing, and I just
10 barely caught the end of it, a called device called a
11 marine "vibrosity"?

12 MR. GOEKE: Vibroseis.

13 DR. LINTON: What is that?

14 MR. GOEKE: It's a new tool that they're
15 working on to try to develop and --

16 DR. LINTON: What does it do? What does it
17 look like?

18 MR. GOEKE: We're going to -- we're going
19 to --

20 DR. LINTON: Maybe we're going to take a
21 break and --

22 MR. GOEKE: Yeah, let's talk some at the
23 break.

24 DR. LINTON: Okay. And the second thing,
25 you're going to ramp up acoustic sources.

1 MR. GOEKE: Yes.

2 DR. LINTON: "Ramping up" means cranking
3 them up.

4 MR. GOEKE: Ramping up in this term means
5 that they start off very low and they build over a period
6 of time so that they can -- again, break.

7 DR. LINTON: Let's take a break, and I'll
8 talk to him.

9 MR. GOEKE: Was there anyone else that
10 wanted to speak?

11 DR. KIENE: I wish to.

12 MR. GOEKE: Yes, sir.

13 DR. KIENE: My name is Bill Kiene, and I
14 work for the southeast region of NOAA's Office of
15 National Marine Sanctuaries. It maybe not appropriate
16 that I speak for NOAA's Offices of National Marine
17 Sanctuaries, but I will --

18 MR. GOEKE: Speak for yourself.

19 DR. KIENE: I will speak as -- make some
20 personal comments.

21 MR. GOEKE: Okay.

22 DR. KIENE: And we have had a very
23 productive working relationship with BOEM over the years,
24 particularly at the Flower Garden Banks National Marine
25 Sanctuary at the Gulf, 100 miles off of Galveston here.

1 And because of that working relationship with not only
2 you and the petroleum industry, Flower Garden Banks are
3 probably the most healthiest coral reefs in the entire
4 western hemisphere.

5 This is -- the sanctuary is surrounded
6 by probably the most industrialized part of the ocean and
7 the world, and it goes to show that we can all work
8 together to have a healthy environment and to have the
9 economic developments that we need in the offshore
10 world. So, look forward to continuing that good working
11 relationship with you, with the industry and the
12 stakeholders in the Gulf.

13 MR. GOEKE: Thank you. Is there anyone
14 else?

15 (Silent pause.)

16 MR. GOEKE: Okay. What we're going to do
17 is we're going to adjourn for 15 minutes; and then, we're
18 going to start back up after 15 minutes and see if
19 anyone's got additional comments. Thank you.

20 (Short recess from 7:06 to 7:21.)

21 MR. GOEKE: All right. We've taken our
22 15-minute break; and during the course of the 15-minute
23 break, we had a question posed to us that seemed to make
24 a lot of sense. The question posed was: Could we give a
25 brief descriptive of a couple of the technologies that we

1 had some questions about. So, I've imposed on two of our
2 experts in the audience. If you would, give us a
3 two-minute explanation of the marine vibroseis and the
4 air guns? Is that what you --

5 MR. ROSENBLADT: The other way around.

6 MR. SEIDEL: The other way around.

7 MR. GOEKE: If you would, go ahead and
8 reintroduce your.

9 MR. SEIDEL: Again, my name is Peter
10 Seidel. I'm with the TGS NOPEC or TGS Geophysical
11 Science and representing the IAGC, the International
12 Association of Geophysical Contractors.

13 The question was regarding this ramp-up
14 and you may hear it called the warm start, but generally
15 speaking -- and I apologize for the people here who know
16 more about this, but I will explain it in laymen's terms
17 so everybody is the on same page here. The sound source
18 is a series of air pressure units that are towed behind
19 the vessel. They can typically be maybe 36 of them towed
20 in different arrays directly behind the vessel that are
21 typically about eight meters, eight meters deep below the
22 surface of the water.

23 And in the good old days before we
24 really cared very much about what was going on, when we
25 came onto the line that we were surveying and it was time

1 to start firing the source, we would just switch all of
2 the guns on simultaneously and at full volume and full
3 capacity and start booming away. We would do a few
4 warm-up shots before we got to the start-up line and then
5 we would progress down the line.

6 Typically the source is fired every 10
7 to 12 seconds on the line. It's a relatively low
8 frequency. It's a short impulse. So, when we talk about
9 ramp-up, it seemed logical that if there were marine
10 mammals in the area when we just switched all of these
11 guns on them and went boom, it seemed logical that we
12 might want to give them a little bit of a warning. So,
13 what we decided or what industry decided to do was to
14 start firing the smallest unit which gives us the
15 smallest amount of sound; and over a 20 to 40-minute
16 period, just gradually add the other units in until we
17 reach full volume. That way the source is gradually
18 increasing in size and the effective area of the noise.
19 So, if there were any marine mammals, obviously the
20 intention was is this would give them warning and be able
21 to move.

22 And that is that. I should also say
23 that these arrays are designed so that the sound travels
24 predominantly downwards. It is fair to say there's some
25 side scatters from these, but they're designed so the

1 array -- the sound travels down into the seabeds. So,
2 any questions on that?

3 MEMBER OF THE AUDIENCE: Would you be able
4 to let us know how fast the vessels are traveling while
5 this is going on?

6 DR. SEIDEL: Typically about four and a
7 half knots is a typical production speed. So, we're
8 moving through the area. So, if there's -- you know,
9 like I mentioned in my comments earlier, it's a
10 transitory thing. So, it's not as if we're staying in
11 one area and constantly sounding -- producing the sound
12 in the same area. We're moving along; and as I
13 mentioned, it's typically every 12 to 15 seconds we emit
14 the sound source.

15 DR. LINTON: Your ship is running six to
16 eight knots, right?

17 DR. SEIDEL: No. In production about four
18 and a half knots typically.

19 DR. LINTON: Have you made -- are there
20 graphs of what those ramp-up sounds --

21 DR. SEIDEL: Yeah, there are. In fact,
22 there's ongoing studies. And part of the JIP is one of
23 the sound source verifications. TGS is also doing
24 another study this year, this summer, in the North Sea.
25 So, yes, that information is available; but there is

1 still a lot of work to do on them.

2 MR. GOEKE: Thank you very much.

3 MR. ROSENBLADT: Bob Rosenblatt from
4 Shell. And the marine vibroseis, or marine vibrator, is
5 a different type of source. It's analogous to vibrators
6 or vibroseis that is used in land seismic exploration. I
7 guess the best description that I can come up with off
8 the top of my head would just basically be like a loud
9 speaker. And instead of an air gun, which is kind of
10 termed an impulsive source where you get a sudden
11 increase in pressure and then quiet for many seconds, the
12 marine vibrator outputs sound over several seconds so
13 that the peak pressure is lower but the duty cycle, if
14 you will, is longer.

15 I think Peter said he worked on a
16 marine vibrator back in the Seventies. That's something
17 the industry has worked on periodically to try to get
18 fruition. Often progress has been made to impress oil
19 drops and then R & D budgets are cuts. So, there's been
20 kind of many attempts over the decades to try and get a
21 viable marine vibroseis source available.

22 Presently there's a joint industry
23 project being funded by Shell, Exxon Mobile and Total
24 working together through our friends here at Texas A & M
25 to develop a commercially available and scientifically

1 attractive marine vibroseis source to give us an
2 alternative in some locations where it would be
3 preferable perhaps over air guns.

4 It also potentially could have
5 technical advantages in terms of things like phasing
6 coating -- you know, different types of output sounds
7 that you're doing, not just environmental reasons but
8 technical reasons might give us an attractive appeal.
9 Also the marine vibroseis may very well work better in
10 very shallow water.

11 So, presently that's what we're doing
12 right now going forward is we've got three vendors.
13 We've gone and looked at 36 potential vendors, and we
14 selected three. We have two of those under contract; and
15 third contract we expect almost within the week or two,
16 very close. So, those three companies we plan to have
17 each of them build a prototype. We'll test it both for
18 acoustic output and durability and then we potentially
19 might then go forward with three full arrays.

20 And what we're really trying to do is
21 launch this is into the industry. This is not what these
22 three companies do as a matter of course. We're not
23 equipment builders. We look for oil and gas, but it
24 would give us -- we're trying to get something out there
25 in the industry to give us another alternative source.

1 Any questions?

2 DR. LINTON: The old style could vary
3 peaks. Is that still --

4 MR. ROSENBLADT: Yeah, that would be the --

5 DR. LINTON: So, you can be -- I don't know
6 how to say it -- cut --

7 MR. ROSENBLADT: There could be certain
8 areas where you only know certain frequency sounds are
9 going to be of interest. You know, if you're in an area
10 where you're seeing that you only get 40 hertz and below,
11 there's no point in outputting frequencies above that.
12 So, it gives us more control.

13 MR. GOEKE: Thank you very much. I
14 appreciate that. Thanks both of you. Let's get back to
15 the purpose of the meeting, which was to see if we had
16 anyone else who had possibly arrived late or anybody who
17 had some additional thoughts, additional comments that
18 they wanted to add.

19 DR. LINTON: Let's hit the bars.

20 MR. GOEKE: Seeing none. I declare us
21 adjourned. Thank you all very much for coming. I
22 appreciate your time.

23 MS. HECKMAN: Thank you very much.

24 (Meeting concluded.)

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

STATE OF TEXAS)
GALVESTON COUNTY)

REPORTER'S CERTIFICATE
BOEM SCOPING MEETING
TAKEN JUNE 17, 2013

I, Rhonda Russo, Court Reporter in and for the State of Texas, do hereby certify that the above and foregoing contains a true and correct transcription of the meeting that took place.

I further certify that I am neither attorney nor counsel for, related to or employed by any of the parties to the action in which this meeting is taken and further, that I am not a relative or employee of any counsel employed by the parties hereto or financially interested in the action.

WITNESS MY OFFICIAL HAND this the ____day of _____, 2013.

RHONDA RUSSO, CSR
Texas CSR 4852
Expiration Date 12-31-13
Firm Registration No. 243
Nell McCallum & Associates
5300 Memorial, Suite 600
Houston, Texas 77007
713.861.0203