

National Ocean Research Leadership Council

4 NATIONAL OCEAN RESEARCH LEADERSHIP COUNCIL

5 DR. COLEMAN: The last area is our attempt at
6 governance. We believe that the National Ocean Research
7 Leadership Council has been a tremendous benefit to the
8 ocean and coastal sciences, but the major issue is that
9 this Council should be given additional responsibilities
10 and greater accountability to really achieve the goals
11 originally set up under the National Oceanographic
12 Partnership Act.

13 In the proposed act, we would amend some of
14 the original responsibilities and accountability.
15 First, we would remove "Research" from the name of the
16 Council -- research is far too narrow; it has a much,
17 much broader mandate -- and expand this mandate to
18 include coordination, integration and planning of all
19 federal marine facilities and operations as appropriate,
20 for example, mapping and charting. We cite several
21 other examples.

We would give to that council the explicit

1 responsibility for the national Integrated and Sustained
2 Ocean and Coastal Observing and Prediction System. They
3 would set the priorities, they would examine the
4 reliability of the prediction system, et cetera.

5 We would expand the membership of the present
6 council by including the U.S. Department of Agriculture,
7 the National Institutes of Health, the Smithsonian, and
8 there will probably be before the end several more that
9 we will recommend to go in there.

10 This fifth one is very important. Specify
11 that this council reports to and takes direction from
12 the National Ocean Council. We will hear more about
13 that when the Governance people speak. However, it
14 reports to and takes direction from the National Ocean
15 Council with respect to implementation of ocean policy.
16 It is an implementing body.

17 Finally, to establish a full-time Federal
18 support office adequately staffed and funded to meet the

19 mandated responsibilities.

20 Mr. Chairman, these are our recommendations.

21 If they are approved, that will essentially get from a

22 public standpoint all of our recommendations for the

1 REMO Working Group. I will be happy to take questions.

2 MR. EHRMANN: Let me remind the commissioners
3 of a couple of items, and then we will go back through
4 slide by slide as we discussed earlier.

5 First, the purpose of this public discussion
6 is to provide an opportunity for all of the
7 commissioners to provide any reactions, questions or
8 responses to the recommendations that are being put up
9 in front of us which, as the Chairman indicated, have
10 been discussed at the working group level but not yet at
11 the full Commission level.

12 I would ask the commissioners to keep your
13 comments to major policy implications, clarification,
14 issues you couldn't live with or aspects of these topics
15 that you think have been left out that should be
16 considered down the road as these continue to be refined
17 through the process. Obviously, wordsmithing and
18 rationale and background information, as Dr. Coleman

19 indicated, will be supplied in the full draft later on.

20 We will apportion our time kind of going back

21 through each of these topics making sure we provide

22 adequate time for each as well as keep an eye on our

1 overall time line. As the indicators know, indicating
2 you wish to speak by raising your placard is very
3 helpful.

4 I know some of the comments went up throughout
5 the topics that Dr. Coleman covered. You can leave them
6 up, that is fine, but I will just be testing to make
7 sure I am not missing someone and I want to make sure I
8 get everybody in who wants to talk about a specific
9 topic. We will again take these in sequence, starting
10 with the academic research funding in ocean sciences. I
11 believe Commissioner Rosenberg had a comment on that and
12 a couple of others.

13 DISCUSSION OF ACADEMIC RESEARCH

14 FUNDING IN OCEAN SCIENCES

15 DR. ROSENBERG: The first one as to the
16 recommendation with regard to a unified grant, which I
17 think is very helpful and which I loudly support.
18 However, I am a little concerned that we set up a

19 unified grants process within each agency, which implies
20 to me that they are separate as opposed to a unified
21 grants process with common software that is used and
22 that each agency can utilize.

1 What I am concerned about here is that we
2 would end up with five separate grants management
3 processes when we could probably do with one, even
4 though Fast Lane is something that I often throw darts
5 at, but it seems like we would really want to have a
6 unified process by having a single one that is managed
7 in a unified way and then tapped into by each of the
8 agencies that might be funding.

9 The second comment is concerning the
10 recommendation about moving academic research to meet
11 agency mission needs, which I again strongly support,
12 although not quite so loudly this time. That is, there
13 is nothing specific about the needs in both applied as
14 well as basic research.

15 Academic research of course can be very much
16 applied research, not just basic research. Currently,
17 the funding for applied research is dealt with very

18 differently and at a much lower level in general because
19 of the way that it is handled then for basic research.

20 I wonder if the working group has thought
21 about that issue and made any specific recommendations
22 with regard to applied research as well as basic

1 research?

2 Thank you.

3 DR. COLEMAN: Thank you, Andy. I will take
4 your last one first. I fully agree with you that we
5 probably should not have said "academic research" there.
6 I guess being an academician myself I always think I am
7 doing basic research, yet much of it is applied. I
8 think as a whole the academic community has not looked
9 at the agencies' need in terms of responding to their
10 needs. That is basically what we were trying to say
11 here, and I think we will go back and wordsmith that and
12 probably do some changes to it.

13 On your second one, we had quite a long
14 discussion of this. In fact, the discussion what did we
15 really mean by a unified grants process in the rationale
16 there is a much larger component to this, but I had not
17 thought of the point you made of having a single process
18 that the other agencies utilize versus one with

19 individuals. We did not discuss that, but I think we
20 will have some time and I would like to go back and look
21 at that. I will talk with you later about what you mean
22 by that.

1 That is a very, I think, bold step if we could
2 do that. Now, whether it is possible within the
3 agencies, I don't know. Right now, you are right, you
4 respond to every agency in a different manner. Thank
5 you.

6 MR. EHRMANN: Dr. Hershman?

7 DR. HERSHMAN: Thanks, Jim. On the first
8 point, the last bullet, your first slide but the last
9 bullet, you talk about "a mechanism -- for transition of
10 -- research results to agency mission needs." I am not
11 familiar with the ONR funding strategy. I have thought
12 a bit about this, and it seems that the mechanism almost
13 needs to be a different kind of an organization whose
14 function is to know as much about the agency's needs or
15 the management needs that the information serves as it
16 does about the research world from which the information
17 comes.

18 I am wondering if in your description of this
19 if it goes that far as to say we need specialists or a
20 special organization that is in that business of making
21 the information usable by agency and management
22 functions?

1 DR. COLEMAN: First, let me just pattern the
2 comment pattern after ONR's funding strategy. ONR had
3 its funding separated into various categories: 61
4 funding, for example, which is basic research, and 62
5 was semi-applied and that carried all the way through
6 final development and implementation.

7 That is, what we meant by this transition from
8 academic research is that we felt if the agencies could
9 identify their needs they could parcel out pots of funds
10 for each of these steps in the process. At least it
11 would force a researcher to look at what the agency's
12 needs are and have the ability then to go from the basic
13 component to the next step and finally to the final
14 step. Did that answer your question?

15 DR. HERSHMAN: Well, it does, but I guess
16 maybe I am just making the point that at least in some
17 experience that I have had you need someone who is in
18 the business of translating from the research to the

19 management needs. It is not so much the progression
20 from research to applied research to actual projects or
21 applications, but it is the need for a translation
22 activity. That is the point I would just like to leave

1 you with and ask you to consider.

2 DR. COLEMAN: All right, okay. You would
3 indicate that this needs to be within the agency itself,
4 am I reading you right?

5 DR. HERSHMAN: Well, that is a good question.
6 Do you mean within the research agency?

7 DR. COLEMAN: Yes.

8 DR. HERSHMAN: I guess it doesn't necessarily
9 have to be, but its function would be to have its foot
10 in both camps.

11 DR. COLEMAN: Right.

12 MR. EHRMANN: Mrs. Borrone?

13 MRS. BORRONE: Thank you. Jim, three
14 observations, and I want to start with the last one on
15 technology transfer. I have participated in the last
16 year or so on a National Academy of Engineering study
17 panel on the impact of research, academic research, on
18 industrial productivity.

19 In that report, there are a number of
20 suggestions that I think might help in this
21 recommendation area because they look at both the
22 structural impediments at university settings and in

1 industry to the ability to transfer results in an
2 effective way. That is one thought.

3 The second is that, at least in the
4 transportation community sector, we have had the benefit
5 from Secretary Volpe's era of technology transfer as
6 being something worth spending time and resources to do
7 and the Volpe Transportation Center in Boston,
8 Cambridge, has been a leader in that arena.

9 While it has gone up and down, depending on
10 resources obviously, there may be some examples of
11 technique as well as the structure, whether it really
12 needs to be in an agency or not. There are some other
13 examples that the Transportation Research Board uses
14 through special funding programs like what they call the
15 IDEA Program, "Innovations Deserving of Exploration and
16 Action," I think it is called. There are some good
17 examples that we might be able to use in illustrating
18 what you have in mind.

19 DR. COLEMAN: Excuse me. Is that a paper or

20 published?

21 MRS. BORRONE: Yes. The third point is that

22 like all of our other recommendations that involve

1 funding, we are going to be incorporating those into a
2 single agenda and I think that will emerge as our first
3 and second drafts start to really get better refined.

4 DR. COLEMAN: Yes, and that is basically what
5 we are saying, that just from this academic research,
6 this is what we feel is necessary and that will go into
7 the larger recommendation.

8 MR. EHRMANN: Commissioners that wish to speak
9 on this topic?

10 (A show of hands.)

11 MR. EHRMANN: Commissioner Kelly and all of
12 you?

13 (Nodding heads.)

14 MR. EHRMANN: Okay, great.

15 MR. KELLY: Commissioner Borrone's question
16 formed a good segue for my question because I had the
17 basic question when we talk about arrangements being
18 made to transfer the results of research to the

19 agencies, whether we had thought about transferring
20 discoveries to the industrial sector or, for that
21 matter, other ocean stakeholders. I think she just
22 cited an example of how that could be very useful. That

1 was my only comment.

2 DR. COLEMAN: Yes. Paul, this is also part of
3 the whole ONR funding strategy also. It did finally
4 reach a point as it went along that panel as it went out
5 to private industries for the development, et cetera,
6 and so forth.

7 MR. EHRMANN: Commissioner Gaffney?

8 ADMIRAL GAFFNEY: Thanks. Of all the
9 recommendations I have seen so far over the year, this
10 is the one I like the best. Thank you.

11 DR. COLEMAN: Thank you.

12 ADMIRAL GAFFNEY: I have a couple of comments,
13 positive.

14 DR. COLEMAN: I was expecting that.

15 ADMIRAL GAFFNEY: No, they are positive
16 comments. The word "grant" is a word of art, it means
17 something. It means something in the federal
18 acquisition regulation. If it is grants and contracts

19 in science and technology, we should say it. If it is
20 grants, then there are different rules for grants than
21 for contracts.

22 In that regard, when you talk about a unified

1 process, I think you have clarified this by saying you
2 are really concerned about the administration of the
3 process not having unified rules for selection. Each
4 agency might have a different selection process. There
5 is something called the Federal Demonstration Project
6 Program that has been ongoing for several years that is
7 trying to do exactly this. It might be useful at least
8 for Ken to get a briefing on it.

9 The really big granting agencies -- NIH, ONR,
10 NASA and NSF -- have been working on this for some time.
11 They have some ideas on how to make it easier: BAAs,
12 electronic selection, electronic funds transfer,
13 closeout, equipment inventory, things like that. I
14 think it might be useful to find out what progress they
15 have made already, and then there may be some specific
16 things.

17 As far as the ONR funding strategy, Mark, I

18 think it is not a separate agency. I think it is a
19 process and a culture. You don't advance in the system
20 unless you aim your research -- at least you get the
21 vector in the right direction. You are incentivized by
22 getting more money for your program, getting advanced,

1 or whatever if you follow this.

2 I think it is a process thing. You will learn
3 as a plasma physicist about the use of free electron
4 lasers to defend ships pretty darned quick if your
5 funding next year depends on it. I think you learn to
6 be the translator yourself. You don't have to be a
7 naval officer or a NOAA officer or something.

8 Thank you.

9 DR. COLEMAN: Paul, thank you. I am glad you
10 called our attention to grants and contracts, and that
11 will be placed in there because they are different.

12 MR. EHRMANN: Yes, Commissioner Muller-Karger?

13 DR. MULLER-KARGER: Thanks. I want to comment
14 on this, since you are going around on this particular
15 issue. I do also strongly and loudly support the idea
16 of streamlining the funding process, because in some
17 agencies it is almost to the point of being broken. For

18 example, specifically NOAA and USGS have a very hard
19 time getting money out of the agency, and that is a
20 process issue. Some agencies like NSF have this process
21 very streamlined.

22 While I don't know if it is possible or useful

1 to have a completely unified federal grant processing
2 system, I do think that agencies need to revisit the way
3 that the money flows out of the agency and streamline it
4 so that the people at the other end can get it in the
5 time where it is needed. Some of the processing, for
6 example, takes up to a year from the time that you are
7 notified of an award to the time that you actually get
8 the money. The same thing happens year after year, if
9 you have renewable contracts. That is my comment on the
10 granting.

11 MR. EHRMANN: I would like to take
12 Commissioner Sandifer and Commissioner Ruckelshaus, and
13 then we will move to the next topic.

14 DR. SANDIFER: Thanks, Jim. Like everyone
15 here, I like this. I particularly like the first
16 bullet. This is the first time that the Commission has
17 confronted what is really going to be required in terms
18 of significant investment. In many cases, we are

19 dealing with small pieces we haven't had a chance to add

20 up yet.

21 I applaud your working group for taking the

22 broad view of what is needed in the research arena.

1 That I very much applaud. I agree with your working
2 group and with the comments from the other Pauls and
3 Frank on the grant process as well.

4 The last bullet is the place I would suggest
5 one change. I am a firm believer in that transition
6 process that you were talking about taking research
7 results into things that really meet agency needs. I am
8 not convinced that that is a single agency issue.

9 It is not just a NOAA issue, and I really
10 believe that this is something for that Leadership
11 Council to do as a subset of the National Ocean Council
12 as opposed to an individual agency. Maybe ONR does it
13 best, or maybe some other agency does it best and can be
14 copied, but this is a matter for all of the agencies to
15 deal with. I suggest that we strike "NOAA" and replace
16 it with the "Ocean Leadership Council."

17 DR. COLEMAN: Very good. I would agree with
18 that, and we will make that change.

19 MR. EHRMANN: Okay. Commissioner Ruckelshaus?

20 MR. RUCKELSHAUS: Jim, the second

21 recommendation on this slide it seems to me -- I am not

22 sure why we are doing it, "Recommend a Federal research

1 policy," I am not sure who would do that, "which urges
2 Congress to demand the Administration develop
3 coordinated 5-year science plans." Why don't we just
4 recommend that the Administration develop a coordinated
5 five-year science plan as opposed to recommending "a
6 policy which urges Congress to demand"? I don't
7 understand why we are doing it that way.

8 DR. COLEMAN: That is a good point. We will
9 go back, I will get with Ken and Ed and we will go back,
10 and examine why we put it that way. However, I take
11 your point.

12 MR. RUCKELSHAUS: Okay.

13 DR. COLEMAN: You are basically saying just
14 say, "Recommend a coordinated five-year plan"?

15 MR. RUCKELSHAUS: Yes, recommend the
16 Administration.

17 DR. COLEMAN: Right, the Administration.

18 MR. RUCKELSHAUS: This says recommend a policy

19 which urges Congress to demand.

20 DR. COLEMAN: Right, yes.

21 MR. EHRMANN: Chairman Watkins?

22 CHAIRMAN WATKINS: Let me just follow up on

1 that a little bit. I agree with Bill. I think it is
2 probably one of the most significant objectives that
3 research groups have had over many years. We have
4 talked about the non-defense agencies coming in line
5 with the defense agencies.

6 The reason you have an ONR Program that works
7 is not just because of ONR, but you have got a whole
8 process cradle-to-grave from research, which can be
9 discovery and it can be applied, and it moves out of
10 there into the first passage into actual application
11 through development, it then moves into test and
12 evaluation, you find out all of the problems, and you go
13 back to research and you solve them.

14 That has tremendous oversight all the way
15 through a system. That is multiagency at that point, so
16 there is a model there that is total. They have been
17 allowed to have a five-year research package for years,
18 the non-defense agencies have not.

19 The Administration, in my opinion, has to work
20 closely with the Congress in allowing a five-year
21 research package so that appropriators can take a look
22 at this and agree, and not only that, but they expect to

1 see a five-year program come up.

2 If you look at the track record on five-year
3 approaches, they have been piecemeal. For example, last
4 year NSF was specifically given a task to develop a
5 five-year program in a specific area. Well, that is
6 okay, but that is just the tip of the iceberg.

7 If you want to stabilize the research base and
8 do the other kinds of things that are in Jim's
9 recommendations, I think that we have got to beef up
10 this section. We have got to go back and get the
11 National Academy reports. The Presidential Council and
12 Advisors on Science and Technology have recommended a
13 stabilized research base in past years. Bring up some
14 of that in the narrative up front to justify a five-year
15 program.

16 Now, we probably can get a maybe, if we are
17 good at it, can get a five-year program for ocean
18 research science and technology, but my feeling is it is

19 applicable across the research base in the country. We
20 should go to the Defense model which has been so
21 successful over many years. Anyway, that is one point.

22 Also, the other point in the very first slide

1 on academic research funding in ocean sciences, I agree
2 with it. In fact, I am a proponent of it, but I don't
3 like the rationale there that we are going back to
4 achieve 7 percent parity with 1982. That is okay, but I
5 assume that the narrative up front and the justification
6 is far more substantive than that.

7 I mean, we have heard presentations here where
8 peer reviewed research focused in accomplishing things
9 for the national need is only funded to one-third of the
10 research programs that have been submitted under the
11 RFPs. Well, I think that is constant across NSF and
12 everybody else.

13 We have an underfunded track record that needs
14 to be highlighted. It is not a matter of a sin of
15 commission here, it is the sin of omission. Nobody has
16 spoken up and said, "Stop it." Why did we drift down to
17 3.5 percent of the research base for the country. Why
18 did we go from 7 percent down? Well, the Russians went

19 away. Well, that doesn't make the oceans less

20 important.

21 I think this needs to be beefed up to get the

22 justification for the five-year program and for doubling

1 the base, which I think is probably under doing it
2 because we are sensitive to the fact that we are
3 proposing some cost increases. We are not going to eat
4 this out of hide. We have to justify that thoroughly.
5 That is just a comment.

6 I like your idea in your international
7 component. I think you need to in the international
8 leadership in ocean sciences recommendation find
9 yourself inside the recent 1999 "National Academy of
10 Science Report on Science Technology in Foreign
11 Affairs."

12 It is a powerful document that admonishes the
13 State Department to get their act together in this area
14 and get the trained people out there and to get the
15 sensitivity to these areas up very high within not just
16 OES, which is the branch that now deals with the ocean
17 in the State Department, but others.

18 There needs to be a linkage between OSTP and

19 the White House with the new National Ocean Council we
20 are recommending, to really strengthen the ability to
21 address science and technology in relation to foreign
22 affairs.

1 We saw it in the Johannesburg Conference.
2 Johannesburg reported a very good report in the ocean
3 area, and the Administration is proud of it. We need to
4 applaud that and we need to say, "Okay, now you were a
5 co-signer to that, we agree with it, we applaud you,
6 let's do it now."

7 That is going to take resources, and those
8 kind of resources are in the base that we are talking
9 about here. There is a lot of justification. Let me
10 see if I have any more items. Yes, there is one more
11 item.

12 MR. EHRMANN: Yes. We will go through them
13 category by category, sir.

14 CHAIRMAN WATKINS: Oh, I'm sorry. I thought
15 you were getting them all at once.

16 MR. EHRMANN: That is okay.

17 I think, though, we just have one more quick
18 comment on this one, and then we are going to move to

19 exploration, if that is okay.

20 DR. ROSENBERG: Just a very quick comment in

21 support of what the Chairman is saying with regard to

22 the five-year science plans. In some of the other

1 agencies like NOAA, there is often a call from Congress
2 to develop a five-year program that is totally delinked
3 from budget. You keep developing all of these plans,
4 but you don't have any place to go with them. Moving to
5 that model where they are actually linked would be
6 actually a major change.

7 DR. COLEMAN: That is a very good point, Andy.

8 DISCUSSION OF EXPLORATION

9 MR. EHRMANN: Let's move to the exploration
10 topic. There were four recommendations that Dr. Coleman
11 introduced under that that are now on the screen.

12 I think, Commissioner Hershman, you had a
13 comment?

14 DR. HERSHMAN: Just a quick question on
15 exploration, point three, "Exploring and mapping." I am
16 interested in the scope that you envision. Would this
17 be just the Exclusive Economic Zone or would it be from
18 the shore, from the baseline, let's say? Would it

19 include estuarine areas? I guess what is the scope of

20 the need in mapping?

21 DR. COLEMAN: That is a very good point, Marc.

22 We will probably change this one to be much more

1 inclusive. We put in a very generalized recommendation,
2 but within the discussion and justification we are
3 developing a strategy of who should do this, how is it
4 prioritized, and where should it be.

5 We really are thinking all the way from the
6 shoreline on out into the deep ocean. Bob Ballard, if
7 he was here, he would be raising his hand. We know very
8 little about the deep ocean, so it will be much broader
9 than this.

10 DR. HERSHMAN: The mapping that is intended
11 would be basic bathymetric or would it be mineral--?

12 DR. COLEMAN: Sub-bottom and water column.

13 DR. HERSHMAN: Okay. Thank you very much.

14 MR. EHRMANN: Commissioner Gaffney?

15 ADMIRAL GAFFNEY: Also, on the third bullet,
16 Jim, I have no problem with the word "exploring." The
17 word "mapping," to me that is a systematic mapping of,
18 as Marc described it, from one inch to 200-plus miles at

19 least.

20 There are two points I would like to make.

21 One is it might be worthwhile putting a sub-bullet in,

22 and maybe it is in the background material, that when

1 data is collected as quickly as possible after QC that
2 it go to a central repository like the National
3 Geophysical Data Center, which today links both NEMA and
4 the Navy, the other two big hydrographic data
5 collectors. That might be useful, because we are not
6 sure that all agencies are actually doing that, sending
7 information quickly to the NGDC.

8 Secondly, we haven't discussed how one
9 executes systematic mapping. In the old days, only the
10 government could do it for various reasons, but now with
11 GPS and multibeam both being declassified and ubiquitous
12 anyone can do it. The Corps of Engineers proves and
13 others prove that industry is able to do this. There is
14 a federal role in funding it for sure and in quality
15 controlling it, doing the contracting for it.

16 Therefore, I think we ought to be looking at
17 what is the proper role of the Federal Government here:
18 How much should be outsourced? How do we take advantage

19 of the huge scale of NEMA, which "NEMA" stands for
20 "national" and not necessarily defense? We also ought
21 to be thinking about the incidental collection of
22 information, of mapping information, that is collected

1 as a routine matter now when one does research at sea as
2 opposed to the operational collectors for navigation and
3 other operational purposes.

4 DR. COLEMAN: Paul, your point about the
5 discussion between what should the Federal Government be
6 responsible for and what should private, that will be
7 discussed in the report.

8 MR. EHRMANN: Commissioner Borrone?

9 MRS. BORRONE: Thank you. Also, on that third
10 bullet, I would like to go back to the concept of
11 mapping as a broader topic area. We have in governance
12 talked about coastal zone mapping the area, the
13 watershed, as well as the coastal zone areas themselves.

14 I really want to raise three points about
15 this. One, perhaps, Jim, we need an overall
16 recommendation on mapping that incorporates all of the
17 different elements that we are talking about so that we
18 can also lay out the expectations of both the ongoing

19 aid as well as the data management needs that Admiral

20 Gaffney was talking about.

21 We need in the third area to talk about what I

22 will call "incentives" and not about just the

1 availability of the data, but why sharing of the data by
2 either state or local entities or private contractors
3 who are not hired by the government, per se, why they
4 might be willing to exchange the information because of
5 the value it can bring them in other ways.

6 I think we really need to know for all mapping
7 recommendations that incorporate the different regimes
8 that are going to be needed in order for us to deal with
9 the different watershed coastal management and then
10 oceanographic issues.

11 DR. COLEMAN: Lillian, just to clarify it, you
12 would broaden this out and say not only is the sea
13 bottom and the water column itself, but there is the
14 atmosphere and the land and this should be looked at in
15 a broad vision?

16 MRS. BORRONE: Systemically.

17 DR. COLEMAN: Good.

18 MR. EHRMANN: Commissioner Muller-Karger?

19 DR. MULLER-KARGER: Thank you. I also had a
20 question on the issue of mapping. These comments
21 reflect that it is not just an exploration issue, but it
22 is an operational issue. I am glad that the issue of

1 outsourcing -- there is an incredible and growing
2 capability in the commercial sector to survey and map,
3 and I don't think that it is always used by the Federal
4 Government the way it should. In fact, the Federal
5 Government many times funds mapping internally and
6 doesn't outsource as often as it should. I am glad that
7 point came up, and I hope it is addressed in the report.

8 It is also not an issue of just mapping depth.
9 I mean, we need to map living resources and all sorts of
10 resources and put them in a spatial context. I don't
11 know exactly if that is all going through the same
12 agency, or do we have a strategy of how all these data
13 are going to flow? Does it flow through different
14 agencies? It is not just the symmetry in making the
15 standard navigational charts; there is a larger issue
16 there of mapping.

17 I want to expand on this issue of how the
18 Federal Government addresses exploration because it

19 permeates all of these other aspects of operation that
20 can be satisfied by other sectors. The Federal
21 Government should serve a coordinating role in that it
22 develops a strategy for the needs of the nation, but the

1 funding itself should be put in the areas where there is
2 capacity. The idea is not to create new capacity within
3 the Federal Government, but to use the capacity within
4 the localities, the regions, within industry and within
5 academia where it exists and foster it, not inhibit it.

6 DR. COLEMAN: Frank, going back to your first
7 point, we did not look at or discuss the living marine
8 resources component of mapping. We dealt primarily with
9 what we would basically call charting and mapping. I
10 think to include mapping of living marine resources you
11 are in a totally different area. Although I agree it is
12 something that is very important, I think we probably
13 should work with Stewardship in that area if we are
14 going to include it.

15 DR. MULLER-KARGER: Okay.

16 MR. EHRMANN: Any other comments on this
17 topic?

18 Commissioner Rosenberg?

19 DR. ROSENBERG: To that point, I don't
20 actually agree. It is not a Stewardship issue. There
21 is a substantial amount to be learned that is truly
22 exploration in terms of what is out there in living

1 marine resources. This is not monitoring of routine
2 resources. Of course, there are programs like census of
3 marine life that have tried to do just that, figure out
4 what is out there in lots of different areas. I do not
5 think it is a Stewardship issue, but it is a straight
6 research and exploration issue and should be included.

7 DR. COLEMAN: You would recommend that we do,
8 at least in the discussion, broaden that definition to
9 include living marine resources?

10 DR. ROSENBERG: Yes, because I do think that
11 there is an important exploration component there.

12 MR. EHRMANN: Okay. Anything else on
13 exploration from any commissioner?

14 (No verbal response.)

15 DISCUSSION OF INTERNATIONAL LEADERSHIP

16 IN OCEAN SCIENCES

17 MR. EHRMANN: Let's move then to the
18 international leadership in ocean sciences. Again, the

19 slide is up for recommendations in that area. Comments
20 from the commissioners? Commissioner Muller-Karger and
21 then Commissioner Sandifer.

22 DR. MULLER-KARGER: Thank you. I want to

1 emphasize what the admiral said earlier. I think that
2 the way that this text is written for international
3 leadership should also include efforts to develop a
4 management strategy at the international level and not
5 just research and education, but actually target
6 sustainable use of resources and get very involved in
7 following up on treaties that we commit to on the
8 international level.

9 MR. EHRMANN: Okay.

10 Commissioner Sandifer?

11 DR. SANDIFER: Thank you. I think that
12 Jim Coleman and the REMO group have done an
13 extraordinarily fine job of highlighting the need here
14 in a little bit of a brief commercial message. A little
15 bit later on, when we do our Stewardship
16 recommendations, this particular area of leadership in
17 international living marine resource management, that is
18 part of what I think Frank is talking about now.

19 All of these things will need to be pulled
20 together someplace in the report. The bottom line,
21 actually two bottom lines: one is the importance of the
22 United States' agencies and academic institutions taking

1 a focused leadership role in international living marine
2 science and conservation and resource management
3 efforts.

4 The second one is the last bullet here that
5 deals with the Department of State, we will come back
6 and talk about that a little bit later on. Jim, I would
7 like a little bit more explanation from you, if you can,
8 as to what you mean by this last bullet, "The Department
9 of State needs to improve communications" regarding the
10 research activity?

11 DR. COLEMAN: Basically, it is a cumbersome
12 process now to get the Department of State -- they
13 should be proactive, looking at what international
14 programs are going on, contacting the various federal
15 agencies and academia and saying, "Look, this is a
16 wonderful opportunity for the U.S. to participate."

17 They should be holding seminars, councils, et
18 cetera, that say, "Look, the U.S. is a leader in this

19 area. Let's go out and track and foster international

20 participation." That was the gist behind it.

21 I do want to agree with you on your first

22 comment. We probably should in that first bullet

1 replace "ocean" with "marine." I think that will make
2 much more sense.

3 MR. EHRMANN: Good.

4 Commissioner Rasmuson?

5 MR. RASMUSON: I want to reiterate what
6 Jim Coleman just said. We debated a long time on that
7 fourth bullet point and we felt, a lot of us who have
8 dealt with the Department of State felt, that they were
9 obstructionists in many ways.

10 (General laughter.)

11 MR. RASMUSON: We are just sick and tired of
12 it.

13 DR. COLEMAN: Thank you, Ed.

14 MR. RASMUSON: We ought to be more specific
15 and say if they won't do it, we recommend to go to
16 another department, to go somewhere else. I mean,
17 seriously we are not getting anywhere with them.

18 MR. EHRMANN: What do you really think?

19 MR. RASMUSON: Well, what I really think is

20 the strong-willed will follow, you know.

21 (Laughter.)

22 DR. COLEMAN: We are not going to tell you

1 what Ed put down for the recommendation.

2 MR. EHRMANN: Thank you. Very good.

3 Any other comments on international leadership
4 in ocean sciences?

5 (No verbal response.)

6 DISCUSSION OF TECHNOLOGY DEVELOPMENT

7 MR. EHRMANN: All right. Let's move, then, to
8 technology development.

9 Commissioner Sandifer?

10 DR. SANDIFER: Again, I think these are
11 excellent. I would hope that under the first bullet
12 deals with "These centers should be federal-academic-
13 private sector partnerships," this is extremely
14 important along with the virtual nature of many of these
15 that allows us to connect a leading research
16 organization or people on the West Coast with the East
17 Coast or the Gulf Coast to Alaska or wherever.

18 I think that to the extent possible, Jim,

19 there should be some really good examples given in the
20 backup here of some of these partnerships. Some of the
21 cooperative institutes and joint agreements and the
22 various and sundry mechanisms that have been proven to

1 work, and so often are difficult to actually get to work
2 because of agency restrictions, but could be recommended
3 to the Congress as proven models that work, just put
4 them in place and let them go about. I would push that
5 as hard as you can.

6 We heard from a number of top scientists that
7 the NSF model of creating "centers of excellence" or
8 providing the opportunities for scientists to
9 collaborate across distances and institutions and
10 disciplines would be hugely important for the country
11 for the future. I think anything that we can do to push
12 that will lead to significant technology development.

13 DR. COLEMAN: Thank you, Paul. This is
14 particularly true and we will cite some examples where
15 because of broadband communication today it can simply
16 just be a station out there.

17 MR. EHRMANN: Dr. Muller-Karger?

18 DR. MULLER-KARGER: Thanks. This is something

19 that we have talked about before, and so this is
20 basically just a cross-reference. When we are pushing
21 the technology development, I would like to make a
22 specific recommendation that they should include

1 technologies to satisfy living marine resource
2 management requirements not only of the nation, but of
3 the globe.

4 MR. EHRMANN: Very good.

5 Admiral Watkins?

6 CHAIRMAN WATKINS: Just as a follow-up, when
7 we met many years ago with key leaders and the large
8 industries, the old marine industries that were there
9 during the Cold War, we were told that unless the
10 United States had a commitment to do something serious
11 there was no bottom-line enhancement for these
12 organizations to get back in the game on small stuff.

13 We have a lot of small businesses who are
14 doing a wonderful job for academic research institutions
15 and others building sensor systems and so forth, but
16 they are all piecemealed around the country.

17 On your second bullet on technology
18 development you have, "A key priority of the centers

19 should be technology in support of an ocean and coastal
20 observing system." I guarantee you that if we really
21 get serious and the nation makes the commitment to build
22 such a system, just the architectural design, the RFP

1 going out that I hope will go out sometime, if it ever
2 does, and gets out there to respond by industry, you
3 will see the big boys coming back into the game, which
4 they need. They will contribute to the R&D base, it is
5 another funding source, if they see a bottom-line,
6 downstream opportunity to bid on system production.

7 We need to make some comment in the report
8 that if you want to get business and industry into the
9 game to help out, just don't talk about it. You better
10 have a program. Here is a major program with a
11 leadership role taken by the United States.

12 Other nations are ready to participate. They
13 have been waiting for the United States to take a lead
14 role here. We have talked about organizational
15 arrangements internationally through UNESCO, through
16 POGO and through a whole bunch of acronyms that are
17 ready to accept, if the United States commits.

18 Another funding source is business and

19 industry when there is an opportunity. I think we need
20 to stress the fact that here is the first opportunity we
21 have had for a national commitment on a large system
22 built over time to do all of the things we need to do to

1 monitor what is going on in our most precious resource.

2 I just bring that up because I hope we don't
3 continue the piecemeal, small level technology
4 development for local use for the long haul; it should
5 not be a long-range goal.

6 DR. COLEMAN: I agree with that, Admiral. Too
7 often we think of technology of, "Just what do I need
8 for my research," and we have to get out of that mode.

9 MR. EHRMANN: Any other comments on technology
10 development?

11 (No verbal response.)

12 DISCUSSION ON EXISTING AND REQUIRED

13 OCEAN SCIENCE INFRASTRUCTURE

14 MR. EHRMANN: All right. Let's move to
15 existing and required ocean science infrastructure.

16 Admiral Gaffney?

17 ADMIRAL GAFFNEY: Amen. I would like to probe
18 a little deeper on the second one, Jim. I wondered if

19 you considered on this money that the Administration is
20 going to request and the Congress is going to
21 appropriate for the UNOLS fleet?

22 I would also throw a forward pass here. I

1 could substitute "Fleet Replacement Plan" and put in the
2 "Ocean Observing System" in there, the same thing, the
3 same question.

4 Did you consider that the money might be put
5 in or controlled, absolutely controlled but may be
6 executed through another agency, but absolutely
7 controlled by the National Ocean Council before it could
8 be spent? Or, in the absence of that, would you pick a
9 single agency to be responsible for all ship
10 construction or all ocean observing rather than the way
11 it is now? It is a pickup game now. We have lots of
12 plans that are unfunded, and we have lots of funding for
13 unplanned assets. Maybe we have got to follow the
14 golden rule.

15 DR. COLEMAN: Paul, we had actually a lot of
16 discussion on that. Once we know that one of our
17 recommendations will define what the NOC would be, that
18 is essentially probably where they should be.

19 MR. EHRMANN: Commissioner Rosenberg?

20 DR. ROSENBERG: Thank you. I was a little

21 concerned about this recommendation as well simply

22 because of the highlighting of the UNOLS Fleet

1 Replacement Plan. I guess I need to be more convinced
2 that that is, in fact, the highest infrastructure
3 priority not because I don't think it is important, but
4 because it needs to be in some kind of prioritized list.

5 It is not clear to me that that investment is
6 ahead, for example, of the Ocean Observing System
7 investment as Admiral Gaffney points out. I also want
8 to agree that the acquisition mechanisms, just like the
9 grants discussion earlier on, really do need to be
10 unified and streamlined.

11 We are chewing up incredible amounts of time
12 and resources in creating one-off acquisition strategies
13 sometimes by people who haven't a clue of how to do the
14 acquisition. I just don't understand why we would want
15 to create that system or perpetuate that system in four
16 or five different places. It doesn't make any sense to
17 me.

18 I think the difficulty is that you have to

19 have a positive mandate that says, "Yes, this is your
20 responsibility," not put it in your priority list, but
21 it is somebody else's job. That is part of the problem
22 that I have had some experience with, something that is

1 not clearly a mandate for the people who know how to do
2 acquisition well is why are they going to get involved,
3 particularly on the smaller projects.

4 This is another area where some unifying to
5 address acquisition, just like with grants, could go a
6 long way. That does not mean that the individual
7 agencies don't get to specify the requirements.

8 I would again echo what Admiral Gaffney said
9 earlier on in the grants discussion. Of course,
10 different agencies have different requirements and need
11 to have tight control of those requirements, but that
12 doesn't mean procedurally we have to replicate the
13 process in different places.

14 DR. COLEMAN: Andy, as far as the comments on
15 the prioritization, we did have quite a bit of
16 discussion. We felt as a working group that way,
17 because the replacement plan already exists and it has
18 been approved but there has been no appropriations, so

19 that is why we placed it very high on the list. As part
20 of that plan, it also does include some of deep
21 submergence assets in it.

22 DR. ROSENBERG: Just very briefly, I

1 understand that but I know of other fleet replacement
2 plans that are also not funded, and so I need to
3 understand. I mean, is it fleet replacement that has
4 been planned for that we want to fund, or is it UNOLS?

5 DR. RASMUSON: It is UNOLS.

6 DR. COLEMAN: UNOLS.

7 DR. ROSENBERG: I know. That is what I am
8 questioning.

9 DR. RASMUSON: Yes. You see, that has been
10 debated and approved, but it just hasn't been funded.
11 We had to start somewhere. Congress hasn't debated yet
12 and not even funded yet this coastal remote system. If
13 you put that up in the first priority, where does UNOLS
14 fall in, then? It has already been approved. We had to
15 start somewhere and say, "Let's get on with this thing."

16 MR. EHRMANN: Admiral Gaffney on this point?

17 ADMIRAL GAFFNEY: Yes. I think Andy has a
18 good point. It is actually one of the reasons I think

19 all of the money should be coagulated into one place and
20 then parceled out. You have got fisheries research
21 vessels issues, you have got NOAA survey fleet, you have
22 got ocean drilling program, you have got the UNOLS

1 fleet, you have got the Navy operational fleet. It is
2 all ship construction money; it is shipyards. There are
3 a few shipyards in the United States; they are in
4 trouble.

5 We ought to have a consolidated plan so that
6 learning curves are taken advantage of, et cetera,
7 et cetera. Putting them all in one place and
8 prioritizing operational versus research ships makes
9 sense to me. That is why I would recommend the NOC
10 actually control the money and the prioritization
11 process or give some agency, as Andy said, the baton and
12 they have got to carry it.

13 DR. COLEMAN: Paul, we will go back and we
14 will put it within the discussion. Very obviously,
15 which was apparent at our discussion, is that it should
16 be under NOC control.

17 MR. EHRMANN: Okay. Dr. Sandifer and then
18 Dr. Muller-Karger.

19 DR. SANDIFER: Jim, I don't have a problem
20 with your listing of potential priorities as long as
21 these are given as examples and not the final
22 conclusions. I do believe perhaps, stealing from

1 Paul Gaffney, that we need to include a data
2 infrastructure here on bioinformatics as specific
3 examples of needs.

4 Regardless of how far we push the coastal and
5 ocean observing systems, the platform side of it and the
6 submergence and the vessels and whatever else, if we
7 don't have a good data management, acquisition
8 management and access system on the shore side, we are
9 going to have some problems. I do believe that this is
10 an appropriate place when we are talking about essential
11 infrastructure, infrastructure at a national scale, that
12 it be plugged in here.

13 DR. COLEMAN: That is a very good point. We
14 really did not discuss that, but we will go back because
15 I happen to agree with you that the data infrastructure
16 is just as important.

17 MR. EHRMANN: Dr. Muller-Karger?

18 DR. MULLER-KARGER: Thank you, Mr. Chairman.

19 We have heard testimony for almost two years

20 now, and I think that we have a good sense of what is

21 important out there and what needs to be done. A lot of

22 these things that you have on your list have been

1 debated in umpteen committees.

2 As you see, there is some sense of priorities
3 within those committees, some committees push those
4 while others push those aside and try to push their
5 favorite technologies or observing systems or ships
6 first. I think a lot of these committees are looking at
7 us, at this Commission, to try to put some order to that
8 process.

9 I appreciate it, and I would like to see your
10 full list of priorities. I don't know if it is five
11 items long or ten items long or how far, how deep you
12 have gone into the infrastructure requirements.
13 However, I do think that we do need to provide some
14 sense of order and priority to what is needed for the
15 country.

16 DR. COLEMAN: Well, Frank, we will address the
17 priority again. I think I can tell you at least in the
18 discussion the three of us, the three on our committee

19 had the UNOLS Fleet because it was already approved,

20 and so forth, was the highest on our list.

21 DR. MULLER-KARGER: I tend to agree.

22 MR. EHRMANN: It sounds like, in terms of that

1 particular issue we were just discussing, there is going
2 to need to be some work done to blend together the sense
3 among the commissioners that some priorities have
4 already been established, and also Admiral Gaffney's
5 suggestion that the National Ocean Council needs to play
6 a role in setting these priorities.

7 I think there is a way that actually you can
8 express your preferences and ask the Council to make
9 this a very high priority to make decisions going
10 forward. I think that, perhaps, would reflect not
11 starting with a clean slate, but reflecting the history
12 that a couple of the commissioners mentioned, but also
13 putting the NOC in a position to be able to continue to
14 make those priority decisions going forward.

15 Does that make sense, Commissioners?

16 (Nodding heads.)

17 DISCUSSION OF NATIONAL OCEAN

18 RESEARCH LEADERSHIP COUNCIL

19 MR. EHRMANN: Okay. We have one remaining
20 issue that was introduced by Dr. Coleman on behalf of
21 the REMO Working Group, National Ocean Leadership
22 Council. Comments?

1 Chairman Watkins?

2 CHAIRMAN WATKINS: The Congress has in words
3 and language coming down in bills last year basically
4 gave this or suggested that the development of the ocean
5 and coastal ocean observing system and prediction system
6 be given to the NORLC. They did that because there is
7 no other vehicle. The law only establishes the Research
8 Leadership Council, not a national ocean council.

9 What I am saying is we need to go back and
10 make sure we understand what the Congress has already
11 said because it is consistent with what their direction
12 has been. They recognize, fully recognize, that more
13 changes to this statute will probably be necessary to
14 round out the passage from research to application.

15 This is the first time that I know of that we
16 have peeked over the research wall to see, "Okay, what
17 do we do now, NORLC, with your plan, with your
18 architectural design?" You are talking about integrated

19 program management with multiple agencies involved
20 including states and coastal observing concepts that
21 have to be developed, the biological sensors, all of
22 those play into the game.

1 It is a huge issue. Changing the title of
2 "research" implies that these people are now going to
3 run something. My feeling is that they have the
4 responsibility for running it, but, again, the National
5 Ocean Council should oversee any of the integrated
6 program management things including such things as
7 NASA's NPOESS Orbital Ocean Satellite System, which is
8 now an integrated program and probably needs more
9 support and funding. But, there are models out there
10 for integrated program management.

11 You are throwing something very large into a
12 system that cannot handle it right now. I would want to
13 expand this even more so that when you are giving the
14 new NOLC I guess you have come up with here this
15 responsibility, again it should be within the context of
16 the oversight and coordination of the National Ocean
17 Council.

18 We should bring in those other integrated

19 programs that say, okay, there has got to be a process
20 to go from ocean science technology research into
21 application, finding out what those lessons are, feeding
22 it back into research, and then to start building this

1 closed-loop system that is going to demand this
2 five-year stabilized base and all of these other things.

3 It is a total process that you are talking
4 about here. It sounds like it is a little piecemeal for
5 one application when it has much broader ramifications.
6 I would think we need to expand a little bit to get a
7 little bit broader.

8 We are opening a new door for integrated
9 program management across very large numbers of agencies
10 and the states and coastal regional concepts, that we
11 have talked about in ecosystem-based management, about
12 how we are going to integrate that into the coastal
13 observing component like GoMOOS is up in Maine, the Gulf
14 of Maine.

15 It is a huge issue here that you are talking
16 about, and maybe we need to get a little bit broader set
17 of words to make sure this is encompassed within a
18 broader concept of a modification of the existing law.

19 DR. COLEMAN: Admiral, that is exactly right.

20 We had a good bit of discussion I think you will see in

21 the written aspect that there was much broader vision of

22 this particularly in that number five. We had a lot of

1 discussion that this council, or whatever it ends up
2 being called, that it reports to and takes direction
3 from the NOC. We did not capitalize the "national ocean
4 council" until we hear from Governance that it is going
5 to be recommended.

6 MR. EHRMANN: Okay. Dr. Muller-Karger and
7 then Dr. Rosenberg.

8 DR. MULLER-KARGER: This is a small point, but
9 I wanted to highlight the potential for confusion here.
10 I know that Bill Ruckelshaus always likes to be crisp
11 and clear and to the point. We have now a National
12 Ocean Research Leadership Council. We have a concept of
13 a National Ocean Research Leadership Council, and we
14 have a National Ocean Council. They all sound awfully
15 similar in naming. I think that we need to be careful
16 that when we talk about things that we don't let the
17 names be so close to each other that we end up confusing
18 one with the other.

19 DR. COLEMAN: I second that, okay. We will
20 take it into consideration. Since we presented first,
21 the NOLC stands.

22 (General laughter.)

1 DR. COLEMAN: Bill, it is up to you now.

2 MR. EHRMANN: To come up with a new name.

3 Thank you.

4 Dr. Rosenberg?

5 DR. ROSENBERG: I have the same concern, and I
6 actually think that there are two parts to this. First
7 of all, I strongly agree that this Council should be
8 reporting to the National Ocean Council. If we are
9 trying to focus on science and engineering, then I would
10 suggest we use those words somewhere, "It is a national
11 ocean science and engineering council," or something
12 like that.

13 I also think that we have had discussions in
14 earlier meetings about National Ocean Council and having
15 an advisory body for that National Ocean Council. I
16 think if you are going to have a sub-body that focuses
17 on science and engineering in order to make sure that
18 you have academic and other agent research institution

19 representation, you need an advisory body that talks to
20 these people, and that we focus their task very clearly.

21 It is fine to have implementation as the
22 direction, but it should be implementation for science

1 and engineering, not broaden it out from that mandate
2 such that we have too many groups that are dealing with
3 broader aspects of ocean policy. It does seem to me
4 that then the support office should be part of whatever
5 support structure exists for a national ocean council,
6 so we don't set up yet more competing organizations.

7 DR. COLEMAN: That is a very good point, Andy.
8 I do like your concept of renaming, putting the science
9 and engineering component. I think that is very good,
10 because that establishes it immediately.

11 MR. EHRMANN: Admiral Gaffney?

12 Oh, go ahead, Jim, if you have more.

13 DR. COLEMAN: No.

14 ADMIRAL GAFFNEY: I am just going to reach
15 back and remind you, Jim, that I mentioned the last time
16 that I spoke that I wanted to see this money controlled
17 by the NOC, even though you may deploy to an agency to
18 execute.

19 DR. COLEMAN: Yes. We had that discussion and
20 that is, indeed, what we have in mind. There is one
21 other aspect that we have --

22 CHAIRMAN WATKINS: Could I follow up, Jim, on

1 the same issue?

2 DR. COLEMAN: Oh, I'm sorry.

3 CHAIRMAN WATKINS: You know, in the
4 modification of that Act, there are many other features
5 that I think we should touch on if we are going to talk
6 about taking out the "R," which may not be the only
7 thing we want to do.

8 Remember, along with Andy's comments, there is
9 an Ocean Research Advisory Panel that is mandated in
10 that law, and that does exist. They are the ones that
11 came up with the integrated ocean observing prediction
12 system. We want to take a look at that and make sure
13 that we don't throw out any babies with the bathwater
14 here.

15 There is a lot of good stuff in there that we
16 need to, say, modestly attune to the National Ocean
17 Council ownership of any of these big programs that,

18 hopefully, will evolve from our Commission work here in
19 time, and make sure that the National Ocean Council is
20 very aware of the integrated program with multiple
21 agencies, states involved, and so forth, that they under
22 our design have the capacity to do.

1 Again, I think it is a vehicle to ride
2 because, in the first place, Congress likes the Act of
3 1996. It is a wonderful one to ride and dovetail in
4 with ours without losing any of the existing things that
5 actually are working.

6 DR. COLEMAN: That is a good point. We did
7 not discuss that, but I will ask Ken and the staff to go
8 back and look at that. John, we had one other area that
9 will just take a few minutes.

10 At our previous meeting, we had gotten public
11 approval for our recommendations on satellite systems,
12 remote sensing. One of the commissioners,
13 Dr. Muller-Karger, brought up another aspect and would
14 like to get this approved at the public meeting. I will
15 turn it over to Frank to discuss this.

16

17 DISCUSSION OF NATIONAL POLAR-ORBITING OPERATIONAL

18 ENVIRONMENTAL SATELLITE SYSTEM

19 DR. MULLER-KARGER: Thank you, Jim.

20 There is something that I think is very

21 specific, but I also think that it is not covered in the

22 statements that we approved earlier, and it is something

1 that even though we have had testimony from agencies
2 that deal with satellites, I don't think it is being
3 covered.

4 In fact, Admiral Watkins just brought up the
5 issue of NPOESS funding. In fact, NPOESS funding was
6 cut this year. What is being cut, the way I understand
7 it, are some of the things that are going to hurt
8 science and research because that is pretty much the
9 first thing that always goes.

10 NPOESS is being planned by operational
11 agencies with a minimal involvement by NASA. The
12 problem is that these items that I have listed here are
13 not being addressed in the strategy and in the plans
14 that are being developed for NPOESS.

15 I think we need to recommend very strongly,
16 since it is going to be the satellite system for ocean
17 observation on the global level, that it be calibrated
18 and validated so that the products are useful for ocean

19 research and for climate research.

20 We should also design a science and data

21 product archive that is long-term that integrates our

22 existing satellite products and makes them compatible

1 with whatever we are going to do for this NPOESS system.
2 That is not happening. There is a little bit of talk,
3 but nobody is funding either the first point or the
4 second point on this, and I think we need to do that.

5 I also think that within the national ocean
6 observing strategy for satellites that we have there are
7 no high-resolution coastal sensors being planned. The
8 constant complaint that you hear from people in the
9 regions and the states and the cities is that you do not
10 have access to data from space that is of a resolution
11 in time and the spectrum and in space that can help you
12 manage your coastal resources.

13 Also, as part of the NPOESS, there is no
14 altimetry program that is long-term, and that is a
15 concern. There are a couple of altimeters that are
16 going to be flown over the next ten years, but by the
17 end of the decade although altimeters are being used by
18 operational agencies, Navy and NOAA, they are not part

19 of our long-term strategy for ocean observation. That
20 is actually amazing. I think that we need to recommend
21 that these kinds of programs are continued.

22 DR. COLEMAN: Thank you, Frank. What we need

1 from the Commission is our working group has approved
2 this as a recommendation. It will be added on to those
3 that we have already developed. I would ask that the
4 Commission, after questions, that they would approve the
5 addition of this.

6 MR. EHRMANN: General Watkins?

7 CHAIRMAN WATKINS: Another follow up to the
8 discussion we just had prior to this, here is an example
9 of an existing interagency program office, multiple
10 agency involvement, a key link in the change of ocean
11 observations to ground truth correlation, it is
12 everything.

13 I see the National Ocean Council, were it to
14 exist as we are recommending, would be one that would be
15 crying, "Foul, don't let this linchpin disappear."
16 There is nothing like that that exists today. It is an
17 example, I guess, of what we need in the way of a
18 relationship between the National Ocean Council and the

19 subsequent integrated program management of existing and
20 planned programs that are coming down so that they are
21 not underfunded and shortchanged for no reason.

22 Who squawks about it? We don't hear it. I

1 would like to put it in that context rather than us
2 supporting a particular program. We are supporting a
3 system that is vital to the integrated ocean observing
4 system. We need to put it into that context rather than
5 having it as a separate item. We have tried to stay
6 away from in this Commission supporting specific
7 programs. As you know, we have a constant stream of
8 people coming in and saying, "You've got to support my
9 program. You've got to support my program."

10 Well, we have to stay out of that. We have to
11 say, "High tides lift all boats, and we are going to try
12 to get the whole national visibility on this up and the
13 investment strategy up." Let us make this an example of
14 the kinds of things that can fall through the cracks,
15 unless we have a National Ocean Council with strength to
16 keep it alive.

17 MR. RASMUSON: We certainly agree with you.
18 We don't adopt a concept like this or this type of a

19 broad concept. What are we doing here? I mean, we have
20 lost a lot of our scientific basis there. We don't have
21 to have a specific system. When Frank and Jim and I
22 were mulling it over this morning, we felt that we have

1 to keep a system available that has all of the bells and
2 whistles that gives everything that we really need in
3 order to advance our scientific knowledge.

4 DR. COLEMAN: Admiral, I like your point very
5 much using this as an example. I will work with the
6 staff to get that accomplished. Admiral, if there are
7 no other questions -- oh, I'm sorry.

8 MR. EHRMANN: Commissioner Rosenberg?

9 DR. ROSENBERG: Just a comment. While I
10 support this recommendation, I think it should be
11 included in the infrastructure discussion, and that
12 again goes back to the priority issue because it is part
13 of infrastructure. I certainly agree with what the
14 Chairman said, but I would rather see it under that
15 overall heading than out on its own.

16 DR. COLEMAN: Thank you, Andy.

17 Mr. Chairman, that essentially from REMO's

18 standpoint, with the exception of our final report that
19 is due in from the contractor which the Oceans Act
20 mandates the Commission to do, and that is, the
21 facilities, we heard the report, as I mentioned, this
22 morning and it is on track.

1 I think this is going to be a very important
2 aspect, because it is the first time that there has been
3 an inventory of existing ocean and coastal facilities.
4 We will be waiting for that before we end up writing
5 something on the discussion. Many of our
6 recommendations are broad enough that we can take from
7 that report and fit them underneath it. Well, that is
8 our next job.

9 CHAIRMAN WATKINS: Well, I think the Research
10 Group has done a wonderful job in putting this together.
11 I think we are going to stress all of these. They will
12 have to be packaged up, as you know, Jim, within the
13 context of what we are going to hear from Stewardship
14 and what I expect we will hear from Governance.
15 However, I think this has been a very good discussion, a
16 very helpful discussion, here today on this.

17 Does that wrap it up here?

18 DR. COLEMAN: Yes. Thank you, Mr. Chairman.

19 CHAIRMAN WATKINS: We are going to enter then
20 the next -- oh. I want to ask staff, are there any
21 hands that go up from the REMO staff or my Ocean
22 Commission staff that want to ask questions?

1 Yes, Ken?

2 DR. TURGEON: (No microphone.) Not so much ask
3 questions. I think it is pretty clear we have got the
4 gist fully what the commissioners have said. A lot of
5 the points that were raised we have already taken into
6 consideration, because of our familiarity with the
7 literature out there. We just could not capture all of
8 that on these slides. We have taken notes and
9 highlighted those to make sure we emphasize them, so I
10 think we are on a pretty even keel there, Admiral.

11

**FOR THE TRANSCRIPT OF THE DISCUSSION ON THIS TOPIC,
GO TO:**

National Ocean Research Leadership Council

This workgroup presented all of its draft policy recommendations and then moved to the discussion phase, which included all of the following topics:

- Academic Research Funding in Ocean Sciences
- Exploration
- International Leadership in Ocean Sciences
- Technology Development
- Existing and Required Ocean Science Infrastructure
- National Ocean Research Leadership Council