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BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

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IN THE MATTER OF: : Docket Number
PENNAMAQUAN TIDAL POWER PLANT PROJECT : P-13884
- - - - -x

Maine Department of
Environmental Protection
106 Hogan Road
Bangor, ME 04401

Friday, October 26, 2012

The above-entitled matter came on for Scoping Meeting,
pursuant to notice, at 1:00 p.m., Nicolas Palso,
FERC Moderator.

1 P R O C E E D I N G S

2 MR. PALSO: All right. It looks like
3 almost everyone is here, I guess. So we'll begin.

4 My name is Nick Palso. I'm with the
5 Federal Energy Regulatory Commission. I'm here for the
6 Pennamaquan Tidal Power Plant Project scoping meeting.

7 I'm going to sit down so everyone can see
8 the screen, just because I happen to be right in front of
9 it.

10 I'd like to introduce my fellow FERCers
11 here.

12 MS. DAVIDSON: Samantha Davidson, FERC.
13 I'll be doing the cultural and recreational use aspects of
14 the project.

15 MR. KARTALIA: My name is Steve Kartalia.
16 I'm a fisheries biologist.

17 MR. PALSO: And I'll be doing the
18 coordinating of the project and dealing with terrestrial
19 biology on the project.

20 We also have two other staff members who
21 weren't able to make it. They'll be doing aquatics and also
22 engineering.

23 A brief overview of our agenda today. I
24 will have an introduction -- I will explain FERC's
25 pre-filing process, which is what we're in the middle of
26

1 right now. I'll explain the purpose of scoping, go over
2 requests for information and studies, resource issues. I'll
3 get through this all pretty quickly since most of it's
4 described in the scoping document.

5 Then I'll hand it over to Pennamaquan
6 Power. They're going to do their presentation. I think
7 they're going to split it up by different resource areas and
8 issues. So they'll take questions about those issues after
9 they explain their little section on that. So we're just
10 going to have it split up by topic.

11 Please make sure you sign in. There's a
12 sign-in sheet floating around, and there's one out in the
13 hallway. Also let us know if you plan to make any comments
14 just so that we can plan -- see how much time everyone can
15 have.

16 We have a court reporter. Everything here
17 is being transcribed. It's going to show up on FERC's
18 eLibrary in about two or three weeks. So please, if you
19 want to say something, make sure you have a mike. There
20 will be a mike floating around the room. Speak into that.
21 It's not going to project on any speakers here; but it will
22 go to the transcriber and make sure that he gets everything.

23 Also, before you speak please say your
24 name, spell it if it's a name that people usually have
25 trouble spelling, and your affiliation, just because -- so
26

1 we can keep track of who's speaking in the transcript.

2 Comments. The comments, scoping comments,
3 study plan requests, those are going to be due on November
4 13th. So please have those -- send those into FERC. We
5 realize that this is a pretty tight deadline. If you need
6 to request an extension for this, please just send a letter
7 to the Secretary asking for an extension to file your
8 comments.

9 They can be written or spoken, too. You
10 can file comments, send them into FERC written, or
11 everything you say here is going to go on the record. So
12 anything you say at this meeting is as good as sending us a
13 written comment.

14 Also, if you're not on it and wish to be on
15 it, we have a mailing list for this project and an
16 eSubscription in our eLibrary. Mailing list means you
17 receive any mailings that get sent out to it. eSubscription
18 FERC has set up. And that is any publication, document that
19 has to do with this project that goes into the docket, you
20 will get an email to that link. You'll get the exact same
21 email to the link that I get in my office back at FERC.

22 So if you go to www.ferc.gov, if you aren't
23 already on there, there's a link. You can sign up, and that
24 will keep you up to date.

25 There's also the eLibrary which keeps the,
26

1 you know, catalogue of all these filings. So if you want to
2 read, you know, the back-story of this project you can go
3 there, type in the project number, which for FERC it's
4 13884, and then you can see everything that's already been
5 filed.

6 We're in the integrated licensing process
7 for this project. This is a deadline-driven process, and it
8 helps to move the project along because we get as much input
9 as we can, you know, fairly quickly and make sure that
10 nothing holds it up.

11 The applicant filed their notice of intent
12 to file and their pre-application document in the middle of
13 July. And our first step is the scoping process. That's
14 where we are now. They're going to work on the study plan
15 developed from what we find from scoping and what people
16 suggest in their study plan requests.

17 And the study plan, we'll have a meeting on
18 that at the end of January to determine what's going to go
19 into that. I'll show later, there's a bit of a back and
20 forth process. But the study plan will be finalized by FERC
21 in about the end of May -- I think the maybe the beginning
22 of May of next year. So that will set forth what
23 Pennamaquan Power is supposed to go out and research for
24 their project.

25 This is a long process we're in here. I
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1 don't want to go too into the details of it. But, you know,
2 it's going to take several years, probably five years. It's
3 going to be -- their going to have, you know, one or two
4 years of field studies. So this is not a fast process; it's
5 going to be a while until they are even submitting their
6 application for the license.

7 Our scoping process. That's why we're
8 here. We want to solicit input and comments. You know,
9 we're in Washington, D.C. We can do our best research to
10 try to find out about this area. But we don't have the
11 local knowledge. So that's why we come out here.

12 You guys have the local knowledge so you
13 can tell us about resource issues that we may not be aware
14 of, you know, the applicant may not be aware of, that
15 weren't in the pre-application document. So we're here.

16 So please, you know, tell us everything you
17 know about this. Identify issues that we may not have
18 identified in our scoping document. We put in there what we
19 know now. But after our public meeting last night it's
20 pretty obvious we're going to have to put out a scoping
21 document two where we include all the additional information
22 that we gathered last night.

23 You know, let us know about existing
24 conditions and also information needs; what kind of
25 information you think needs to be gathered before they can
26

1 move forward with the project.

2 And the resource issues we're dealing with
3 here are geologic and soil resources, aquatic resources --
4 that's a big one. It includes water quality, you know, all
5 the fisheries, invertebrates. Terrestrial resources.
6 That's wetlands, everything that breathes air, basically.

7 Recreation and land use is also a big one.
8 Aesthetic resources. How is this going to look, you know,
9 how is the project going to look going across the
10 Pennamaquan River. Cultural resources, of course,
11 historical and archeological sites that may be there and
12 could be affected. And also developmental resources and
13 economic, socioeconomic ones. What, you know impact is this
14 project going to have on the area there in Pembroke and all
15 around the Cobscook Bay.

16 I'll just go through this pretty quickly.
17 It's pretty wordy. But it's all in the scoping document
18 there toward the end. This is the information we're looking
19 for: Information that can help define, you know, the
20 geographic and temporal scope of analysis. You know, should
21 we just be looking in the Pennamaquan River or does this
22 cover the whole Cobscook Bay and certain resources.

23 We're looking for any data that describes
24 existing environment and the effects the project could have
25 on that.

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1 Also identify any federal, state or
2 resource plans that we may not have been aware of and let us
3 know what those resource plans are so we can include them.
4 And also study requests. These are, you know -- put forth
5 what you want the applicant to study when they're going to
6 go through their one or probably two years of field studies.

7 The study request criteria. This is real
8 important. And again, this is in the back of the scoping
9 document. It's in Appendix A. If you're filing a study
10 request for a particular study please include all of this
11 criteria.

12 You need this criteria in order to put in
13 the study. So you can't just say, 'Hey, you should study
14 periwinkles.' You know, you have to tell us what the goals
15 and objectives of the periwinkle study would be. Explain
16 the relevant resource management goals; say what the nexus
17 between project operations and how the study results would
18 inform for the license requirements.

19 And also go into methodology. That's a
20 real important one. Explain how it's consistent with
21 accepted practice. But, you know, be as specific as you can
22 and say like, you know, 'you'll need to sample certain times
23 of year,' because as we learned, all throughout the year
24 there's different fish species and other species coming in
25 and out of this area.

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1 So, you know, make sure you say that it
2 needs to be studied in January and December and not just --
3 because they could be studying it in July and August.

4 Again, the request for information and for
5 study requests, that's November 13th. And as we're finding,
6 this is probably too tight of a deadline. If you need more
7 time, please file an extension. You can just send that to
8 the address below. And I don't believe there will be any
9 trouble with getting your extension to file that.

10 Also clearly identify on your first page
11 that this is for the Pennamaquan Tidal Power Plant project
12 and put the number there. That's 13884-001.

13 You can file your study requests or
14 comments or information. It can be via the internet -- you
15 can go to www.ferc.gov and write it in there and it will pop
16 up. And you can also mail it to our Secretary, Kimberly
17 Bose. Her address is there and it's also in the scoping
18 document.

19 And no matter how you file your comments,
20 they all have the same weight. And again, any comments you
21 make today on the record, they'll have the same weight.

22 Important dates. Again there's that
23 November 13th deadline. The proposed study plan will be due
24 from the applicant December 28th. And then about a month
25 later -- we're looking at January 27th -- that may be

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1 slightly flexible.

2 MR. KARTALIA: Yeah, somewhat flexible.

3 MR. PALSO: Yeah. It's somewhat flexible.
4 But that's what we're aiming for.

5 That will be the study plan meeting that
6 the applicant will conduct. And that's where all the
7 agencies and everyone who's interested can come and, you
8 know, say, 'Well, we need to see this in the study plan.'
9 It's where you get to discuss what is in the proposed study
10 plan.

11 Then the applicant goes and revises the
12 study plan if they need to, to include any additional
13 requests. Their revised study plan will be due April 27th.

14 And then at FERC the Office Director of the
15 Office of Energy Projects, which, you know, we are all a
16 part of, he'll make the study plan determination. And that
17 will be May 27th. And that will set forth the studies that
18 the applicant needs to do.

19 Question? Could you speak into the mike?

20 UNIDENTIFIED PARTICIPANT: No, no, no.

21 Where will the study plan meeting be held?

22 MR. PALSO: The study -- the question was:
23 Where will the study plan meeting be held?

24 This is the applicant's meeting so they'll
25 be able to set it up. They can hold -- I think probably

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1 Bangor would be a logical choice, but they can have it at
2 Pembroke or someplace that's, you know, easy for everyone to
3 get to.

4 FERC may attend. We'll probably attend
5 that meeting, or phone in. But we do not set it up like we
6 set up this scoping meeting.

7 Also I'm about to hand this over to
8 Pennamaquan Power.

9 I'd like to thank Jim for allowing us to
10 use his office building. This was a big help because it's
11 kind of difficult for us in Washington, D.C. to find places
12 to hold meetings, you know, far away in Maine. So thank you
13 very much for allowing us to come in here, and also getting
14 everyone together. That was a big help.

15 Now I'm going to hand it over to
16 Pennamaquan Power. They'll do their presentation. They'll
17 present specific resource areas. And then open it up for
18 questions and comments.

19 Does anyone have any comments or questions
20 about the FERC process that I could answer right now?

21 UNIDENTIFIED PARTICIPANT: Are there copies
22 of the scoping document available for us?

23 MR. PALSO: The question is: Are there
24 copies of the scoping document available.

25 There may be one or two left. But actually
26

1 we had such a big crowd last night they took them all.
2 However, it's available on the eLibrary at FERC. And I
3 believe some people have also had to email that. So it's
4 easy to get a hold of.

5 Another question?

6 UNIDENTIFIED PARTICIPANT: You have
7 referenced several times the sign-in list. I have not seen
8 it.

9 MR. PALSO: Oh. The question was about the
10 sign-in list floating around.

11 There is a sheet -- yeah, there is a page
12 there. There's a couple of them floating around, and
13 there's one out in the hallway. So if you haven't signed
14 in, please do so, so we can keep a record of everyone who is
15 attending.

16 And I see you've got some people on the
17 conference phone there. If you could just email your name
18 to Jim, he can write it down.

19 UNIDENTIFIED PARTICIPANT: Oh. And Jeff
20 Murphy's on the phone.

21 MR. PALSO: Okay. We have Jeff Murphy on
22 the phone.

23 I'll hand this over to Ramez, and he can
24 take it from there.

25 MR. ATIYA: Very good.

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1 While we're doing that, yesterday we had a
2 very long and extended meeting. All sorts of issues were
3 actually brought up. But I'd like to say for the record
4 that most of these issues are actually covered in the PAD.
5 So what I would like to do is I would like to read a list of
6 the issues that actually were brought up and which issues
7 were not covered in the application document.

8 So the issues were regarding marine
9 mammals, state species list, fishing, seaweed transport,
10 temperature profiles, invasive species, eelgrass beds,
11 hazardous substances, wind-driven interactions, canoe and
12 kayak access, lobsters, the R.H. Foster property, why 16
13 turbines, property values, lights, peace and quiet, sea,
14 cost over time, sedimentation, clamming, violent events,
15 elvers, noise, power availability. And there was a question
16 regarding ebb generation cycle.

17 There was also a comment by the
18 Passamaquoddy that this is -- that waters in general are
19 considered sacred and this is a cultural issue.

20 Of these, the following were actually not
21 covered in the PAD. They were seaweed transport, hazardous
22 substances -- and perhaps I could just say a word about each
23 of these as we go through there.

24 Seaweed transport we do not see as a
25 problem because in fact we have sluicing capacity over the
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1 turbines. This happens four times a day, so any transport
2 of seaweed will in fact pass through the structure.

3 Hazardous substance, we're putting in
4 concrete and steel. There are no hazardous substances that
5 are going to be -- or effluents that are produced by the
6 plant. The only hazardous materials would be things like
7 fuel associated with construction rigs and that sort of
8 thing.

9 Wind-driven interaction. That is something
10 in fact we did not consider in the PAD. And it needs to be
11 included in there. It has both positive and it has -- it
12 has potentially actually positive results that were pointed
13 out by Professor Daborn, who is the head of the Estuarine
14 Institute at Acadia University. And he pointed out that
15 when in fact you decrease, you know, wind-driven events the
16 result is an increase in marsh -- in sea marsh. And he's --
17 this is certainly a positive factor.

18 Canoe and kayak access. This is something
19 that has to be addressed, and we have not addressed it.

20 Property values. It's a complicated issue.

21 Sea level rise. This is actually easy to
22 deal with in terms of actually increasing the height of the
23 structure.

24 Violent events. These are the kind of
25 storms that we got within the last couple of days. And I

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1 think these can be accommodated by altering the flow rates
2 through the barrage.

3 There was an issue that was brought up
4 about elvers. And we do not have an answer to this.

5 One of the -- an elver fisherman there said
6 that elvers tend to swim close to shore. And if they do
7 then there would be an access problem because -- what we've
8 planned for is for their actually passing through the
9 turbines the kill rates would be negligibly small.

10 But I see Professor McCleave here and he
11 would be able to advise us on anything dealing with eels.

12 Those are the -- so there were basically
13 seven issues that were brought up that we had not
14 considered, of which I think two are, you know, require
15 study. Notably the issue of the elvers and their migratory
16 habits; and the other is the wind-driven interaction.

17 So with that, are there any comments about
18 -- regarding that?

19 MR. DIFFENBACHER-KRALL: John
20 Diffenbacher-Krall. I'm the executive director of the Maine
21 Indian Tribal State Commission.

22 At the beginning of your presentation you
23 cited issues that had been identified that are not addressed
24 in your written materials to date.

25 MR. ATIYA: Yeah.

26

1 MR. DIFFENBACHER-KRALL: One I didn't hear
2 you summarize just now, and that was the indigenous view of
3 water as sacred.

4 MR. ATIYA: Yeah. No, I actually did that.
5 I did identify that as a --

6 MR. DIFFENBACHER-KRALL: You did identify
7 that. But then you didn't explain -- you didn't offer any
8 comment about whether you're addressing that or not.

9 MR. ATIYA: Well, this is -- we do address
10 it. But, you know, this is an issue that would require, you
11 know, discussion with, you know, with the appropriate
12 people. I mean it's -- because it's complicated.

13 I mean, you know, when you deal with the
14 sacred nature of water, you know, the question for me is,
15 okay, so, you know, in concrete terms what does that mean,
16 you know, and what do we, you know, what are you proposing
17 when you say these are sacred waters. And that's a question
18 that I would pose to you.

19 MR. DIFFENBACHER-KRALL: I don't speak on
20 behalf of the Passamaquoddy people.

21 MR. ATIYA: Okay.

22 So, you know, these are the sorts of
23 questions that we would want to ask because we would need to
24 translate that kind of question into something concrete.

25 MR. LABERGE: Let me add something to that.

26

1 Normand Laberge, Passamaquoddy Tribe.

2 The PAD or the NOI had a statement that
3 said the developer did not think it would impact the
4 Passamaquoddy Tribe. Also I don't think there was a record
5 of any consultation with the Passamaquoddy Tribe on any
6 issues dealing with the Passamaquoddy Tribe.

7 So to say that it's been addressed in the
8 PAD or the NOI, it has been addressed. But it was addressed
9 in saying that there's no impact on the Passamaquoddy Tribe.
10 And when members of the Passamaquoddy Tribe met with the
11 FERC staff on Wednesday there were a number of issues that
12 the Tribe had problems with.

13 And so I just want to make it clear that
14 the PAD did not have any reference to Tribal concerns on the
15 project.

16 MR. ATIYA: Okay. I'd like to respond to
17 that.

18 MR. LANDRY: Andrew Landry. I'm counsel
19 for the project. I just want to respond to Mr. Laberge
20 quickly.

21 We've included the Passamaquoddy Tribe on
22 every filing we've made with FERC from the initial document,
23 and as part of our community outreach attempted -- or at
24 least reached out to the Tribe at early stages and
25 throughout our community consultations. While we do
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1 understand that we weren't successful in being able to
2 schedule such a meeting, but it wasn't for lack of effort on
3 our part.

4 We indicated in our filing our
5 understanding with respect to the potential for impact on
6 the Tribe. But obviously the whole purpose of this process
7 is to reach out to all of you folks and any folks who are
8 interested to try to find out what issues they have. And
9 now that that issue has been raised, obviously it's going to
10 be one that we'll address in future filings and after
11 additional consultation with the Tribe.

12 So I'll just leave it at that.

13 MR. ATIYA: Well, and I'd also like to add
14 that, you know, we did -- we received an email from Donald
15 -- We earlier contacted -- had spoken with Steve Crawford.
16 This was part of our early consultation. We received an
17 email from Donald Septoma. And we tried to -- we said we
18 would be glad to speak to him over the phone and we'd be
19 glad to set up a meeting with him.

20 I received no further communication from
21 him. And so we were prepared to have, you know, meetings
22 with the Tribe. So it wasn't for lack of an effort. We've
23 been open all the way.

24 MR. DIFFENBACHER-KRALL: To the FERC staff
25 -- this is John Diffenbacher-Krall again for the record -- D

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1 as in David-i-e-f-f-e-n-b as in boy-a-c-h-e-r hyphen capital
2 K-r-a-l-l.

3 To the FERC staff, there is a President
4 Clinton executive order from the fall of 2000, and then
5 President Obama executive order affirming that executive
6 order and taking it further. How has this process to date
7 complied with the executive order on Tribal consultation and
8 is the applicant in compliance? And how are you monitoring
9 that?

10 MR. PALSO: I'm not sure myself about how
11 the applicant is in compliance.

12 I know that FERC -- I believe we are
13 because we have sent out a Tribal letter once we found out
14 -- once we got the pre-application document we sent it to
15 all the Tribes in Maine asking if any of them would like to
16 have a meeting and the Passamaquoddy took us up on it. And
17 we went to meet with them.

18 This is -- for us, this is very early in
19 our process. So I understand the applicant has been, you
20 know, putting this together for some time. But for us we
21 just started. So, you know, right up as early as we can
22 we've met with the Tribe to include them. And we had a very
23 good meeting with them discussing their issues.

24 I'm not -- I'm sorry, we don't have one of
25 our lawyers here. He or she could explain it better how
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1 FERC keeps the applicant in line with following that. But
2 they are required to consult with the Tribes in the state
3 or, you know, in the area of concern. And that's one of the
4 things you look for in their application and their
5 pre-application document.

6 MR. DIFFENBACHER-KRALL: Just as a
7 follow-up because of a comment Mr. Landry made.

8 Notice is not consultation at all. Notice
9 is a small part of consultation. And you know when
10 consultation has been satisfied when the party that you're
11 supposed to consult with feels like it's had full
12 consultation. That's very important.

13 MS. DAVIDSON: This is Samantha Davidson
14 with FERC.

15 Under the FERC process that the applicant
16 is now within, they at this point have not asked to be or
17 haven't been designated as under Tribal consultation. So
18 since it's the FERC process, we are in consultation which,
19 you know, Nick just talked about.

20 We had a meeting and that's the first of,
21 you know, whatever meetings or teleconferences or
22 discussions that we want to have to move forward. So at
23 this point within the FERC process we are required under our
24 regulations to consult.

25 They're not -- clearly the applicant is a
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1 part of the process that triggers the process. But the
2 consultation is with FERC. If that answers your question.

3 MR. LABERGE: Normand Laberge again.

4 The Tribe did receive a notice and a copy
5 of the PAD. But my question to FERC would be: Why did it
6 send a letter to the five or six Tribes in Maine asking if
7 they wanted consultation? Was there something in the PAD
8 that indicated that consultation had not been completed?

9 MR. PALSO: No. We always do that. We're
10 very proactive.

11 So to cover all the bases once we receive a
12 PAD for a project we send out the letter because, you know,
13 in our experience in the past sometimes it's been sent to a
14 Tribe and they didn't really notice it. It gets lost
15 somewhere. So we want to make sure that they are aware that
16 this is going on.

17 And also we really want to meet with the
18 Tribes. So we follow up with a letter to see if we can set
19 up a meeting.

20 And we send it to all the Tribes because,
21 like, again, that's why we're here: We're not experts in
22 the area. So we realize the Passamaquoddy Tribe is very
23 close. But we want to cover all the Tribes in Maine to make
24 sure if they have any historical significance to the
25 Cobscook Bay area that they were notified.

26

1 MS. DAVIDSON: This is Samantha Davidson
2 again.

3 Again, it's not a question of wanting to
4 consult. We're required under our regulations to consult.

5 MS. HADLOCK-SEELEY: I'm Robin
6 Hadlock-Seeley. I'm a marine biologist at Cornell
7 University and I live in the project area.

8 I want to object to the applicant's
9 characterization of the over three-hour meeting last night
10 as only raising two issues that weren't raised in the PAD.
11 I myself submitted three pages of comment on the scoping
12 document where the scoping to me seemed inadequate, and
13 included many, many issues that were not brought up in the
14 PAD.

15 MR. TUCKER: My name is Chris Tucker. I'm
16 a representative with the Laborers' International Union in
17 North America. And I've got two questions that I'd like to
18 see if I can get answered.

19 I also advocate amongst communities and
20 workers throughout the communities on the actual responsible
21 construction period of the projects to make sure that all
22 communities, you know, benefit from the construction of any
23 project of this significance. For an example: good health
24 care, good livable wages and some sort of health care
25 benefits versus eight dollar an hour workers.

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1 So that's one of my questions I have. And
2 hopefully the developer could adhere to that.

3 And the other one is that I am a 15-year
4 elver fisherman here in the State of Maine, born and raised
5 in the State of Maine. I've fished them for years. And
6 when this type of project covers the cover like that, the
7 study really needs to take a good look at it because, like I
8 said, they run with the tides and they run in the incoming
9 tides. And again, it's second to largest of lobster right
10 now and the biggest fishery in the State of Maine.

11 So it does have a big effect. There was
12 230 new Passamaquoddys that were licensed to fish them this
13 past year. There's 430 legal fishermen in the State of
14 Maine plus the new 230 Passamaquoddy fishermen. So it is a
15 big industry in the State of Maine and it brings a lot of
16 revenue to the state.

17 So that's something that really has to be
18 fixed because if it's going to affect them, they're already
19 looking to shut down the industry because they're saying
20 that they're trying to prove that they're becoming extinct.
21 So any new harm upon them is going to have a big, big
22 impact. So that study has to be truly looked at.

23 MR. PALSO: I can guarantee you that after
24 the meeting we had last night, that was brought up and that
25 is certainly going to be looked at with the fishery.

26

1 Regarding the workers and wages and living
2 -- livable wage, I am not sure that FERC can have any
3 requirements with that. But I believe the applicant can
4 work with the community to establish that.

5 Is there anything else? We can give it
6 back to Ramez there to continue with his presentation.

7 MR. ATIYA: This is the Pennamaquan Tidal
8 Power Project. It consists of a barrage structure across
9 Pennamaquan River. It consists of four power houses that
10 are 22 meters by 33 meters in length and six wall elements
11 as sections that tie it into the shoreline. It doesn't
12 quite go up to the shore; it's actually below high tide
13 maximum tidal levels.

14 So are there any questions about the
15 structure itself? The wall structure itself is about ten
16 feet in width. These are about -- the power houses are
17 about 60 feet in length. It consists of turbines at the
18 base and sluices at the top that can be opened and closed.

19 Yes.

20 MR. HUBBARD: Dan Hubbard from the First
21 Coast Guard District.

22 The small boatlock, what are the dimensions
23 on that --

24 MR. ATIYA: Okay.

25 MR. HUBBARD: -- and what's the capacity?

26

1 MR. ATIYA: We actually redesigned the
2 boatlock. What we propose to do is put two gates rather
3 than one across the sluiceway. And by doing so we can
4 operate it as a boatlock. And the dimensions are 20 feet by
5 60. And so that should accommodate, you know, boats that
6 are in that area.

7 We can also open two sections rather than
8 one, making it 40 by 60 instead of 20 by 60.

9 MR. BEYER: Jim Beyer from DEP.
10 Will the boatlock be accessible at all
11 times?

12 MR. ATIYA: Yes.

13 MR. BEYER: Okay.

14 MR. LABERGE: Normand Laberge again.

15 Usually a project of this type requires an
16 exclusion zone for certain types of boats or kayakers or
17 canoeists. If you put the locks so close to the turbines
18 and you say you can get access to the locks at any time, how
19 would you have safe access through the locks, say at
20 mid-tide where you have your highest velocity through the
21 turbines?

22 MR. ATIYA: If you actually take a look at
23 the flow rates inside going through the system here, they
24 are not significantly higher than maximum tidal rates. And
25 we'll go through that when we go through the operating

26

1 cycle. So if they can manage the tides they can manage the
2 sluiceways.

3 MR. LABERGE: So you're saying there's no
4 exclusion zone even though your map shows an area that's
5 denoted but not defined? So are you saying there's no
6 exclusion zone while you're generating power?

7 MR. ATIYA: Well, I'm saying there's no
8 exclusion zone for fishing vessels or for larger boats.

9 Now, you know, an issue of a kayak is
10 another story all together, you know. And that would have
11 to be -- that would actually have to be looked at.

12 So I tried to organize this by way of the
13 -- well, I'm having a little bit of a problem here, but its
14 okay.

15 The figure here just shows the layout of
16 the plan of the tidal power project. It's across the mouth
17 of Pennamaquan River. And I don't think there's much more
18 to say about that.

19 Yes.

20 MR. PRICHARD: With regard to that slide,
21 there was a comment made last night -- I'm Dan Prichard.
22 I'm with the Maine Department of Agriculture Observation
23 Enforcement. P-r-i-c-h-a-r-d.

24 Last night there were questions raised
25 about property values.

26

1 MR. ATIYA: Yes.

2 MR. PRICHARD: And that jogged a thought in
3 my head about this -- the river area inside the barrage --

4 MR. ATIYA: Yes.

5 MR. PRICHARD: In a normal riverine
6 hydropower project that would be the impoundment area and
7 part of the project area.

8 MR. ATIYA: Right.

9 MR. PRICHARD: And the license-holder would
10 have control of that project area.

11 MR. ATIYA: Yes.

12 MR. PRICHARD: This is a new animal --

13 MR. ATIYA: Yep.

14 MR. PRICHARD: -- in that it remains
15 inter-tidal, but the river side of the barrage is no longer
16 open and available to open waters as it is now. Do you
17 envision needing to acquire some sort of -- for lack of a
18 better word -- flowage easements from the property owners
19 that are downriver because their access to navigable waters
20 is somewhat impeded over what it is now?

21 MR. ATIYA: Oh. Okay.

22 MR. PRICHARD: And then I wonder if that's
23 a question that he speaks for.

24 MR. ATIYA: It depends on what we're
25 talking about here, because indeed, you know, there may be

26

1 -- there are issues in terms of kayaks and canoes getting
2 through there.

3 You know, the larger boats can get through
4 there. But kayaks and canoes is, you know, is something
5 that has to be looked at. And so that is -- that's one of
6 the issues that we in fact did not deal with in any way that
7 would have to be looked at.

8 MR. BEYER: Jim Beyer again.

9 Along that same line of thinking -- and
10 this would be a question for you, Mr. Landry -- and I don't
11 know the answer. But you will need to explore whether or
12 not you need to have tidal right or interest for everything
13 that gets -- the tidal change -- The tidal regime will be
14 different, and whether or not you'll need to show tidal
15 right or interest to all of those areas.

16 I don't know the answer to that. But
17 that's something you will need to explore.

18 MR. JOHNSON: Mike Johnson with the
19 National Fisheries Service.

20 When we were at the site yesterday visiting
21 the site we noticed that there were channel markers,
22 navigational channel markers within the river. And I'm just
23 curious what the designation of that channel is, whether
24 it's an Army Corps of Engineers, state, or local maintained
25 channel.

26

1 MR. ATIYA: I'm not sure.

2 MS. DREWNIAK: Megan Drewniak, U.S. Coast
3 Guard. Last name D-r-e-w-n-i-a-k.

4 I can say from the Coast Guard perspective,
5 since the question came up, we are going to explore, you
6 know, just jurisdictionally as well. And now just honestly
7 learning about the real project location, we're going to
8 have to look at that, too, because those were some questions
9 that came into our heads as to, one, just jurisdictional
10 authority; but also more than that. Who is maintaining that
11 channel?

12 So that's a question that certainly we're
13 going to be looking at. But I think you as the applicant
14 are going to have to answer that as well because if we get
15 into movement of any aids or, you know, concerns with those
16 aids, we're going to have to explore that more. So

17 MR. ATIYA: Okay.

18 Moving on, one of the key historical
19 problems with tidal range power is the effect that it has on
20 the inter-tidal zone. We realized early on that the issue
21 of the preservation of the natural cycle within a basin was
22 absolutely essential to any successful tidal range power --
23 certainly any responsible development of tidal range power.

24 So what we developed is we in fact showed
25 that a parallel cycle is possible. In blue, is the natural
26

1 tidal cycle. This would be the tidal on the Cobscook Bay
2 side of the project. And in purple here, or violet, is
3 shown the rise and fall of the water within the basin. The
4 rise and fall of the water within the basin parallels the
5 natural tidal cycle, but it is shifted over in time.

6 And what this does is it reproduces the
7 natural ebb and flood of the tide within the basin. It
8 maintains the natural boundaries of the inter-tidal zone.
9 And because the flow rate and the rise and fall is the same,
10 we project no net sedimentation.

11 There will be some sedimentation close to
12 the structure itself, but the general flow pattern should
13 remain unchanged. And therefore there should be no
14 sedimentation, other than the natural, that would be
15 different.

16 MR. LABERGE: Normand Laberge.

17 MR. ATIYA: Yes.

18 MR. LABERGE: Have you considered what the
19 impacts would be of a longer high tide and a longer low
20 tide?

21 MR. ATIYA: Yes. In fact, we modeled this
22 -- we modeled the process for tides between 1.23 times the
23 average tide and down to .69 of the average tide. Above
24 1.23 the water overtops the structure and as a result it
25 would rise to its natural level anyway. And so --

26

1 MR. LABERGE: That's not the question. The
2 question is:

3 If you look at the sine curve --

4 MR. ATIYA: Yes.

5 MR. LABERGE: -- at the very point at the
6 top, you look at the modified scheme, it stays high for
7 maybe an hour and it stays low for maybe an hour or so.
8 Have you looked at the impact --

9 MR. ATIYA: Yes, we have.

10 And in fact, one of the reasons why we
11 chose 16 turbines rather than two turbines is because what
12 we can do is we can start the turbines sequentially here and
13 decrease this residency time, because we were concerned that
14 there might be problems associated with residency time
15 during the slack period.

16 So we did this. And we did it -- And we
17 can in fact more closely represent this. So this is sort of
18 the starting default.

19 Yes.

20 MR. PRICHARD: Dan Prichard again.

21 I'm not sure how you'd study or model this,
22 but I assume that by altering the -- delaying the peaks and
23 ebbs of the tide you're -- and having this barrage across
24 the mouth of the river --

25 MR. ATIYA: Yeah.

26

1 MR. PRICHARD: -- you're changing wind and
2 current patterns. So while there may not be a net
3 sedimentation problem, it seems likely that there's going to
4 be differential sedimentation inside the basin because of
5 those changes. And as you suggest, there may be salt
6 marshes developed --

7 MR. ATIYA: uh-huh.

8 MR. PRICHARD: -- where there aren't today
9 --

10 MR. ATIYA: Yep.

11 MR. PRICHARD: -- on inter-tidal properties
12 -- inter-tidal areas that are owned by the 75-some-odd folks
13 that own runnage in the basin.

14 Is there some way of modeling where that
15 might occur and whether that might be --

16 MR. ATIYA: Yeah. I think that that would
17 be one of the -- this was one of those areas that we
18 suggested, you know, specifically for study because there
19 was no simple answer to this. And these were the wind
20 interactions. Okay?

21 You have to remember that this is a very
22 low structure. It sits only 13 feet above the water over
23 most of its length. And so, you know, it's not much higher
24 above mean water level than this room here.

25 And so, you know, there are limited --

26

1 there's going to be limited impact. Now exactly how limited
2 that is, you know, and how we deal with waves, for example,
3 in terms of -- you know, this is also a long embayment. And
4 so the question is, you know, what is the fetch for such an
5 embayment, you know, and what is the wave regime in it. You
6 know, these are issues that would have to be studied in
7 detail.

8 And one of the things that we propose to do
9 is in fact to study the wave regime in that area and to see
10 how it interacts with -- you know, how it interacts with
11 wind.

12 So our first approximation here is to
13 maintain the natural ebb and flow of the tides, and then,
14 you know, to deal with these additional issues later. And I
15 mean these, as I pointed out, you know, the development of
16 salt marshes may not be a bad -- you know, it may be a
17 positive effect.

18 By the way, I have put the relevant chapter
19 and verse here from the Code of Federal Regulations.

20 Let me just move on ahead here.

21 These parallel -- we developed the parallel
22 cycle first independently, and then modeled it with Alstom
23 Power. Alstom Power is a highly experienced turbine
24 manufacturer; it's probably the largest turbine manufacturer
25 in the world. And so, you know, the development of the
26

1 cycle has been -- is really extremely reliable. And it's
2 based on entirely-understood principles of, you know, power
3 generation from horizontal bulb turbines.

4 We propose to do a geotechnical and
5 submerged soil study.

6 The hydrology of the project is intended --
7 the parallel cycle is intended to preserve the inter-tidal
8 zone and the natural boundaries so we don't change the
9 natural boundaries associated with -- unlike a conventional
10 hydro project, we're not changing the boundaries in any way.

11 We anticipate that there will be no net
12 sedimentation other than those kinds of factors due to wind
13 that we talked about, and local factors near the immediate
14 vicinity of the plant.

15 If you look at the cycle here you will note
16 that the slope of the line is the same -- closely follows
17 the natural slope of the curve. That means that the rate of
18 flow into the Pennamaquan River would be the same as the
19 natural rate of flow. So, you know, this is important from
20 a biological and from a hydrology perspective.

21 Potential studies. We need to do a tidal
22 range and volume study. We are proposing a 2-D or a
23 three-dimensional flow modeling study in order to establish
24 that in fact flow patterns within the Pennamaquan River are
25 maintained -- the natural pattern without the plant. And we
26

1 would do sedimentation modeling, including the kinds of
2 issues that Dan brought out.

3 Water quality studies. These are dictated
4 by Maine DEP and in general they will tell us exactly what
5 we need to do.

6 We also need to get U.S. Army Corps of
7 Engineer permits.

8 One of the other studies that we need to do
9 is we would like to purchase the R.H. Foster property there
10 and convert that into an area for us to put in the control
11 house.

12 This plant is -- Are there any questions or
13 comments about any of these issues?

14 Yes, Dr. Seeley.

15 DR. SEELEY: I understood from yesterday's
16 meeting that you also need a permit from the town?

17 MR. ATIYA: Yes. I in fact was going to
18 ask exactly what the -- I mean this is a legal issue. And I
19 don't want to say anything that would be incorrect. And so
20 this is something we wanted to look at.

21 UNIDENTIFIED PARTICIPANT: Undoubtedly some
22 sort of site plan or land use permit so that their local

23 UNIDENTIFIED PARTICIPANT: I wouldn't
24 speculate.

25 UNIDENTIFIED PARTICIPANT: Yeah.

26

1 MR. ATIYA: Jim Beyer knows the --

2 MR. BEYER: At a minimum -- This is Jim
3 Beyer from DEP.

4 At a minimum you will need a shoreline
5 zoning permit from the town.

6 MR. VERRILL: Ted Verrill.

7 Assuming that there is anything placed in
8 that inter-tidal zone, right, in that --

9 MR. BEYER: No.

10 MR. VERRILL: Not inter-tidal zone --
11 within the

12 MR. BEYER: It's 250 feet of water.

13 MR. VERRILL: Right. Fine. Right. Of the
14 high water mark?

15 MR. BEYER: High water mark.

16 MR. MURPHY: Hi. This is Jeff Murphy with
17 NOAA Fisheries. Can you hear me?

18 MR. BEYER: Hang on, Jeff.

19 MR. MURPHY: Okay.

20 MR. BEYER: Try again.

21 MR. MURPHY: Jeff Murphy with NOAA
22 Fisheries.

23 MR. BEYER: Go ahead.

24 MR. MURPHY: This project has the potential
25 to affect trust resources in our jurisdiction, in particular
26

1 fish species listed under the Endangered Species Act,
2 including short-nose sturgeon, Atlantic sturgeon and
3 Atlantic salmon. Therefore a consultation pursuant to
4 Section 7 of the Endangered Species Act would be required
5 between FERC and NINF.

6 The project also has the potential to
7 affect marine mammals protected under the Marine Mammal
8 Protection Act. And I would encourage FERC to contact our
9 headquarters in Silver Spring early to see what the
10 requirements would be and whether that authorization would
11 be required.

12 We plan to submit study requests at the
13 appropriate time, and appreciate FERC having this meeting
14 with us today. Thank you.

15 MR. SWAN: Brian Swan, Department of Marine
16 Resources.

17 I was wondering about the operation of the
18 boatlock, boat lift. Would that be self-operating?

19 MR. ATIYA: No. We would have someone
20 there to operate.

21 MR. SWAN: You're going to have somebody.
22 Okay.

23 UNIDENTIFIED PARTICIPANT: Onsite, yeah.

24 MR. ATIYA: Yeah, there would be an onsite
25 person.

26

1 MR. SWAN: 24 hours a day.

2 MR. ATIYA: Yeah, because there would have
3 to be somebody at the plant at all times. And that person
4 would be -- part of their obligations would be the operation
5 of the lock.

6 MR. SWAN: Thank you.

7 MR. DIFFENBACHER-KRALL: John
8 Diffenbacher-Krall.

9 We couldn't put it up there as a regulatory
10 requirement. But I will note that the State of Maine was
11 the first state in the United States to support the U.N.
12 Declaration on the Rights of Indigenous Peoples, which was
13 adopted by the United Nations General Assembly on September
14 13th, 2007.

15 Of those 46 articles perhaps one of the
16 most pertinent articles is Article 19, which requires free
17 prior and informed consent of indigenous people of projects
18 in their aboriginal territory. This is definitely
19 Passamaquoddy territory, this project. And President Obama
20 in December 2010 also lent United States support to U.N.
21 Declaration on the Rights of Indigenous Peoples.

22 I think in terms of being an applicant that
23 wants to respect the peoples of the State of Maine,
24 including the Passamaquoddy peoples, that's something you
25 should also keep in mind is that U.N. Declaration on the
26

1 Rights of Indigenous Peoples.

2 MR. ATIYA: Thank you. And we will, you
3 know, we will have, you know, appropriate consultation.

4 Another aspect of this project that I think
5 is important is the fact that it is fully decommissionable.
6 All of these elements are floatable so that -- this project
7 has a projected lifetime of a minimum of 120 years, at the
8 end of which all of the parts can be refloated and removed,
9 and the support columns can be cut down to seafloor level.

10 The elements themselves are floated in and
11 put into place. This sort of gives a simplified picture.
12 But a more detailed account is given in the pre-application
13 document.

14 The next group of issues are -- have to do
15 -- okay, we covered hydrology. Okay.

16 Operation impacts. One of the things that
17 we particularly focused in on was the issue of fish passage.
18 And our choice of bulb turbines was driven by the experience
19 at Annapolis where it was found that pressure gradients were
20 resulting in mortality because of issues with fish ladders.

21 So we selected bulb turbines because it was
22 shown through extensive studies by the Pacific Northwest
23 Laboratories for DOE that in fact pressure gradients were
24 not a factor in bulb turbines. They measured the pressure
25 drops in Annapolis and found them to be approximately I

26

1 think 750 kilopascals. I know I'm going to be quoted on
2 this, so let me put in a disclaimer.

3 In bulb turbines they did not exceed 175.
4 They did extensive studies and showed that in fact there was
5 no mortality due to pressure gradients. So that was the
6 first issue that needed to be resolved.

7 So there are two factors in terms of fish
8 mortality that we identified. One are pressure gradients,
9 and the other are mechanical strikes. So we eliminated
10 pressure gradients by the choice of bulb turbines. Then the
11 question was mechanical: What are the effects of the
12 mechanical strikes. And these, it turns out, depend on the
13 length of the fish, the number of blades in the runner, the
14 RPM of the runner, and the speed of the water.

15 We optimized the bulb turbines with Alstom
16 to maximize fish passage. And that included reducing the
17 number of blades to a minimum -- which were three. We
18 proposed putting in a speed increaser so that we could have
19 a reasonable size generator that would operate at high speed
20 but having a runner that operated at low speed. So it's a
21 92 RPM runner.

22 We also propose to close gaps between the
23 various moving parts of the turbine.

24 Then we wanted to calculate what the fish
25 mortality looked like. And we used a widely employed
26

1 formula developed by Frank for the Department of Energy; and
2 it was in consultation with the Idaho office. The formula
3 has a great deal of actual backing in terms of data.

4 But being a physicist and being skeptical,
5 we insisted that we have some observational data to confirm
6 that specifically for bulb turbines. And so what we did is
7 we compared the predictions of the Frank formula to actually
8 observed data for bulb turbines that actually operated and
9 were very similar to those that we would use.

10 So we then calculated the prediction, the
11 mortality rate for species passing through those bulb
12 turbines. By the way, we found a very close agreement
13 between these. And all of that is detailed in the PAD. I
14 won't go through it.

15 But we then selected species that were
16 listed either by NOAA in consultation in particular with
17 Mike Johnson and with Greg Burr of the Maine Department of
18 Environmental Resources -- No, I'm sorry. Inland Fisheries
19 and Wildlife.

20 It was a long night last night. So if I'm
21 a little bit thought-disordered, please forgive me.

22 The calculation is that for spawning -- for
23 rainbow smelt the survival rate is somewhere between 98.4
24 and 97.9 percent, depending on the length of the fish. For
25 spawning alewives it was between 96.8 and 97. And for
26

1 elvers passing through the turbines it was essentially 99
2 percent. The data on elver passage is basically 100 percent
3 on observational data.

4 Now the question for us on the elvers --
5 and this was brought out at the meeting last night -- was,
6 all right, the elvers can pass through the turbines. The
7 question is, you know, where do they swim? You know, are
8 they actually passing -- would they pass through the
9 turbines, do they follow?

10 Maybe Professor McCleave can enlighten us
11 on that point.

12 PROFESSOR MC CLEAVE: I need to study the
13 design -- Jim McCleave, sorry. M-c capital C-l-e-a-v-e.
14 I'm from the University of Maine.

15 I need to look at the schematic again in
16 detail. But someone already mentioned that elvers tend to
17 swim primarily along the shoreline. And some studies that
18 we did in the Penobscot estuary back in the 1980s would
19 verify that at least there's a congregation of elvers
20 following the shorelines on the flooding tide. It makes the
21 regulation that the middle third of the river has to be open
22 and free of nets is kind of a moot point. The same thing
23 might occur in this case.

24 What I haven't done is do a calculation of
25 sort of assumed eel densities times the volume of water that
26

1 goes up the middle of the channel versus along the shore
2 because clearly congregations along the shoreline, that's
3 where the fishermen fish and have good success.

4 But I think the biggest issue here is
5 probably not passage through the turbines for elvers, but do
6 they have free passage along the shoreline.

7 MR. ATIYA: Yeah. And this is a question
8 -- and in fact we had not considered in the PAD and it was
9 not specifically addressed as a study. And this is
10 something that would definitely have to be studied after
11 both the comments last night -- in particular your comments.

12 MR. LABERGE: Ramez, you mentioned you did
13 the mortality study. Did you also do it when the turbines
14 are operating as pumps?

15 MR. ATIYA: No.

16 MR. LABERGE: No?

17 MR. ATIYA: We did not. I'm assuming that,
18 you know, from just mechanical considerations it's
19 reasonable to assume that they would be the same because
20 you're talking about mechanical strikes. And so, you know,
21 therefore just from a physics point of view you would expect
22 it to be the same, you know. But that again would have to
23 be confirmed. That's a good point.

24 MR. LABERGE: But when you're pumping you
25 would expect that the RPMs would be greater than --

26

1 MR. ATIYA: No. The RPMs are not greater;
2 they're always maintained at 92.

3 MR. MURPHY: This is Jeff Murphy with NOAA
4 Fisheries.

5 I would just add that we would expect
6 mortality of fish to be significantly greater for adult
7 fish. It showed significant mortality events of Atlantic
8 sturgeon at Annapolis.

9 I would also note that the Frankie formula
10 is really quite limited. It only attempts to assess
11 immediate mortality; it doesn't attempt to assess delayed
12 mortality or indirect mortality that would be associated
13 with predation and other indirect mortalities. So just
14 please note that.

15 MR. ATIYA: Thank you.

16 MR. BURR: I am Greg Burr with the Maine
17 Department of Inland Fisheries and Wildlife.

18 Ramez, we've spoken several times over the
19 phone.

20 MR. ATIYA: Yes.

21 MR. BURR: And thank you for including the
22 potential mortality for brook trout and brown trout in your
23 PAD.

24 One of the things that we discussed that I
25 think we need to look at, because we believe we've got

26

1 anadromous brown trout and brook trout in that Pennamaquan
2 Bay area, and it may be different than -- their movements
3 may be different than many of the other species because they
4 may move in and out with the tide.

5 MR. ATIYA: Yeah.

6 MR. BURR: So it would be a cumulative
7 effect going back and forth through the turbines with the
8 mortality potential there. I just want to make sure that
9 those two species get their biology gets looked because we
10 know very little about movements in general with our
11 anadromous brook trout and brown trout.

12 MR. ATIYA: That was proposed as one of the
13 studies, in fact, to determine exactly that.

14 MR. JOHNSON: Mike Johnson, National Marine
15 Fisheries Service. A similar comment as the gentleman back
16 here:

17 River herring are another one of those
18 species that after spawning, during the summer and fall,
19 some of the studies suggest that the fish will maintain in
20 the estuary and use the estuary during those seasons. So
21 rather than similar to a diadromous fish that might swim up
22 once and come back down, these fish may be swimming in
23 through the estuary during several seasons over several
24 months.

25 And so whether we use these mortality
26

1 figures or survival figures or others, you have to take into
2 account that many of these fish may swim through the
3 turbines on multiple occasions during that season.

4 MR. ATIYA: Yeah.

5 And in fact, the movement of this species
6 is one of the studies that we proposed, you know, because in
7 speaking with you and others, you know, we realized that
8 there are certain -- it's unknown exactly the nature of
9 their movements. I mean do they move out of the fresh water
10 into the saltwater?

11 We presumably know that they do, right?

12 MR. JOHNSON: Uh-huh.

13 MR. ATIYA: And so the question is then how
14 far do they move down. Do they go down with the tides; do
15 they go through the turbines; you know, do they do this on a
16 daily basis; do they swim from the freshwater into the main
17 part of Cobscook Bay on a daily basis. So we would have to
18 do some sort of a radio-tagging possible study, you know, to
19 determine what the movement of these fish are. And these
20 would include the smelt and the herring as well.

21 I believe -- I'm not sure who it was who
22 made the comment about -- well, let me just go on and I'll
23 get back.

24 Yes.

25 MR. BEYER: Ramez, while we're on the issue

26

1 -- This is Jim Beyer -- of fish mortality through the
2 turbines.

3 MR. ATIYA: Yes.

4 MR. BEYER: Does it make any difference
5 which way the fish goes through the turbine? Because in
6 most riverine situations the water is going one way; the
7 fish aren't swimming back up through the turbine.

8 MR. ATIYA: Yeah.

9 MR. BEYER: In this case they're apt to be
10 going in either direction through the turbine.

11 MR. ATIYA: Well, you know, presumably --
12 You know, this is a good question. And, you know, there are
13 certain assumptions here that the fish, for example, swim
14 with the tides. Well, do they?

15 MR. BEYER: Right.

16 MR. ATIYA: You know, I mean, you know, so
17 these are things that have to be determined just from an
18 energy conservation perspective you would expect them to
19 actually use the motion of the water, you know, to move
20 around.

21 But perhaps either Professor McCleave or
22 Professor Seeley can shed more light on this, or Mike
23 Johnson or some of the other people who are --

24 MR. BEYER: But even if they are using the
25 -- swimming with the tide, the difference between this
26

1 proposal and a classic dam across a river --

2 MR. ATIYA: Yeah.

3 MR. BEYER: -- is that the fish will
4 approach the turbine from two different directions. And it
5 may be going with the tide.

6 MR. ATIYA: Oh.

7 MR. BEYER: But still, you've got a blade
8 over here and a bulb back here. Does it make a difference
9 if the fish is coming at the blade first or going by the
10 bulb first?

11 MR. ATIYA: You would not expect it
12 because, after all, you know, this is a mechanical strike.
13 And so therefore you're looking at the probability of a
14 moving part hitting a fish. And so whether you --

15 MR. BEYER: Convince me.

16 (Laughter.)

17 MR. ATIYA: -- whether you play the picture
18 -- Okay. I mean, you know, we'll take steps to do just
19 that.

20 MR. MURPHY: This is Jeff Murphy, NOAA
21 Fisheries.

22 Jim, I wish you'd add that one of our
23 criticisms of the Frankie formula is that there's a
24 correlation that assumes fish will enter turbines at optimal
25 angles. We've worked with Alden Research Labs recently to
26

1 refine that. But that is one of our criticisms of the
2 Frankie formula.

3 MR. TUCKER: Chris Tucker.

4 On the elver and the silver and the
5 female-males on the eels, and again as an experienced
6 fisherman, the elvers migrate into fresh water when they're
7 babies. Then they get raised in the fresh water. Then they
8 go to Saragasso Sea to spawn, so they come out and go lay
9 their eggs and stuff. So with that being said of this
10 gentleman right here, that's mortality we got to look at
11 because, you know, you're talking death on both ends:
12 coming in the tide and death going out through.

13 MR. BEYER: Yeah.

14 MR. TUCKER: So that's really something
15 because it's crucial on both ends.

16 MR. ATIYA: Absolutely. And that was --
17 one of the proposals dealt with just these issues in
18 particular because you've got, you know, silver eels that
19 are large eels. And so what we proposed was during the --
20 as they're migrating out to the Saragasso Sea that we would
21 capture them through the fishway, and that they would be
22 then transported below the turbines.

23 When we calculated the mortality rates they
24 came out to be, you know, as you can see for large females,
25 you know, for 100 centimeter females it came out to be 89.4.

26

1 I want to make a comment regarding Jeff
2 Murphy's comment about the Frankie formula. One of the
3 things that we did is we actually compared the result of the
4 Frank formula with actual data from turbines, from
5 horizontal bulb turbines that were used and operated in a
6 similar way as those that, you know, we are proposing to
7 use.

8 And so it was not simply just an
9 application of the Frank formula. We actually compared the
10 data of the Frank formula with the survival rate.

11 Now some of these survival rates are --
12 were longer; they were 72 hours. Many of them were a
13 one-hour survival rate. And so undoubtedly the issue will
14 come -- you know, when you have mechanical strikes, how do
15 one-hour survival rates compare with, say, 72 hour survival
16 rates. And so this is an issue that would have to be
17 ascertained.

18 MR. DIFFENBACHER-KRALL: Thank you.

19 Could we go back to that previous slide?

20 MR. ATIYA: Sure.

21 Is this the one you're talking about?

22 MR. DIFFENBACHER-KRALL: Yeah.

23 MR. ATIYA: Okay. Yeah.

24 MR. DIFFENBACHER-KRALL: Did the observers,
25 the research note on the female eels, most of the data is
26

1 fairly close in mortality. But it's interesting to me that
2 those larger female eels, 89.4 -- or you can think of that:
3 more than one in ten eels is being killed.

4 MR. ATIYA: That's right.

5 MR. DIFFENBACHER-KRALL: So let's --

6 MR. ATIYA: That's why we're proposing not
7 to let them go through the turbines.

8 MR. DIFFENBACHER-KRALL: Was there any --
9 Do they have any hypothesis why the females seem to have
10 more mortality?

11 MR. ATIYA: Well, it's a larger fish. The
12 females, you know, range of 38 to 100 centimeters in terms
13 of spawning females. And so therefore, since length is a
14 factor in mortality, you would expect a higher mortality
15 rate for larger eels.

16 MR. DIFFENBACHER-KRALL: And then just my
17 other comment, as noted by others. This is a species of
18 concern already.

19 MR. ATIYA: Yep.

20 MR. DIFFENBACHER-KRALL: And in fact an
21 environmental group has petitioned for potential listing as
22 either threatened or endangered under the Endangered Species
23 Act.

24 MR. ATIYA: Yeah.

25 MR. DIFFENBACHER-KRALL: So we want to be
26

1 very cautious in any population of this species that's
2 already of concern of mortality.

3 MR. ATIYA: That's why we've cited it as a
4 special species, and that's why we've suggested special
5 measures in order to preserve the population.

6 So plant and animal studies. And I believe
7 that the first issue really is closely tied to a comment
8 that Jeff Murphy made, and that's the question of -- I
9 believe -- I couldn't hear very well, so excuse me if I
10 misheard -- but it was a question of other fish.

11 We did look into the issue of sturgeon.
12 And there seems to be little evidence of the presence of
13 sturgeon. You know, we consulted Gail Wippelhauser
14 regarding the presence of sturgeon, and she suggested that
15 in fact there were no sturgeon likely in that body of water.

16 Now Professors McCleave and Zislowski did a
17 -- have been carrying out a fin fish study. And I thank
18 them for providing the data to us. What we would like to do
19 is we would like to use that fin fish study and in fact
20 extend it, perhaps.

21 You know, this actually was to the boundary
22 of the Pennamaquan River, but not inside it. Am I right?

23 PROFESSOR MC CLEAVE: That's correct.

24 MR. ATIYA: And so we would want to -- we
25 would actually want to extend it to confirm that once we get
26

1 past the barrage, in fact the fish population -- the species
2 and the numbers of these fish populations roughly match
3 their figures. So that is one of the studies that we're
4 proposing.

5 Then we have the river herring, rainbow and
6 wild brook studies. These were specifically, you know,
7 size, distribution, as well as movements in order to, you
8 know, assess what kind of impact fish -- they would have in
9 terms of fish passage.

10 Aquatic vegetation. There are extensive
11 studies available on aquatics and vegetation. We would just
12 -- we would want to update these studies. And we would want
13 to include in that a statement which Dr. Seeley suggested,
14 and that's the issue of seaweed transport. So that would be
15 something that we would add to our studies.

16 Invertebrate studies really involve a
17 couple of issues. Since we're not altering the boundaries
18 of the inter-tidal zone, nor are we altering the rate of
19 flow in and out of the estuary, you know, it's reasonable to
20 expect that this would have -- that the impact on some
21 invertebrates would be small.

22 Now that does not include species such as
23 lobsters, crustaceans which need to move would have to be
24 looked at. And we have in fact proposed a crustacean study.

25 Micro-invertebrate and moon snail studies
26

1 actually have to do with a proposed alternative to the way
2 that we generate power. And maybe this isn't the right time
3 to go through it.

4 But we would argue that in fact by pumping
5 higher than the normal at neap tides, that during the summer
6 months we would actually provide some additional protection
7 to organisms living in the inter-tidal flats. We would
8 provide some additional protection to organisms living in
9 inter-tidal flats. So presumably by doing that we would
10 actually be able to improve the productivity of the
11 inter-tidal flats.

12 I mean our default is to reproduce the
13 natural cycle, tide by tide, you know. But we would request
14 as an option to actually determine whether we could have a
15 beneficial effect by doing this.

16 It was suggested, for example, by some of
17 the local people that if we were able to do this it may in
18 fact decrease moon snail predation since a lot of the
19 organisms actually come up through the mud because of algal
20 growth during the summer.

21 Now this is speculative stuff, so I
22 hesitate to get into it. Again, our default is tide by tide
23 we reproduce it. But we like to look at these options, you
24 know, because if we can actually do something additionally
25 beneficial, you know, we'd like the opportunity to do it.

26

1 PROFESSOR MC CLEAVE: This seems like an
2 appropriate time -- it's Jim McCleave again, University of
3 Maine.

4 Many people in the room may not know
5 exactly what our team at the University of Maine has been
6 doing in Cobscook Bay. And it's quite relevant to this
7 discussion, I think.

8 In 2011 and 2012 we sampled the fishes in
9 six different locations in Cobscook Bay in May, June, August
10 and September, with a little bit of playing around in some
11 other months. But we've got two years of information.

12 Benthic trawling in the channels of outer
13 Cobscook Bay, East Bay, South Bay, Dennys Bay and Whiting
14 Bays, basically covering the area. Benthic trolls,
15 mid-water trawls, inter-tidal speed seining, a limited
16 amount of fike netting. And those data -- I'm just
17 compiling for 2012 -- but those data will be available.

18 We file an annual report with Fish &
19 Wildlife Service, with NOAA, with Maine DMR, giving not so
20 much great analysis at this point but at least tabulations
21 of what we've caught where.

22 We don't do any trawling in the project
23 area. But one of our inter-tidal seining sites is in Hersey
24 Cove, which is upriver of the project location. So we do
25 have ongoing studies that will continue in 2013, probably
26

1 2014 as well.

2 The studies initiated were of relevance to
3 the ORPC's project, but at especially the request of Fish &
4 Wildlife Service, we expanded that study to include all of
5 Cobscook Bay to take a more sort of ecosystem level look at
6 the bay.

7 So for fishes, at least, we've got good
8 data sets coming -- primarily summer. But that information
9 is available -- will be available to interested parties.

10 To date we've only done sort of tabulations
11 of abundance by location and date. But we also have length
12 and weight information on all those species that we capture
13 and so on. So there's quite a reasonable data set
14 available.

15 MR. SHEPARD: Steve Shepard with the U.S.
16 Fish & Wildlife Service.

17 This is probably as good a place as any
18 just to point out that we'll be providing comments and study
19 request in writing at a later time. Those comments and
20 study requests will cover resource areas that are also
21 covered by National Marine Fisheries Service and Fish and
22 Wildlife, Maine Department of Marine Resources, and our
23 comments will be prepared in close coordination with those
24 agencies.

25 Just to comment on this slide while we're
26

1 here, several times you've mentioned radio-tagging studies.
2 But those would not be appropriate because radio energy
3 doesn't propagate in high conductivity water. But acoustic
4 studies would be much more appropriate.

5 MR. ATIYA: Yeah. Okay.

6 Well, these are studies that would
7 obviously have to be made by people with the relevant
8 expertise. So I'm speaking as a physicist summarizing our
9 efforts here and not as a fisheries expert.

10 MR. SHEPARD: Yeah. So that's about it.

11 MR. BEYER: Jim Beyer. And a question for
12 Steve.

13 Can you acoustically tag a rainbow smelt?

14 (Laughter.)

15 UNIDENTIFIED PARTICIPANT: They're not very
16 big.

17 MR. ATIYA: I know.

18 MR. SHEPARD: No, the details do require a
19 lot more consultation with the applicant to work out.

20 No, you could not really tag rainbow smelt,
21 in all likelihood; perhaps some very large ones. Nor could
22 you tag juvenile river herring. Nor could you do any sort
23 of tagging studies of elvers. There are a lot of
24 limitations on addressing the behavioral aspects of passage
25 at this facility.

26

1 MR. ATIYA: Okay.

2 One of the areas that in fact we have not
3 covered adequately -- we haven't covered in -- One of the
4 areas where we find insufficient information is the issue of
5 marine mammals. You know, we don't know the quantity, the
6 distribution of marine mammals. And so therefore this has
7 to be a major effort.

8 Now we do have solutions to the issue of
9 marine mammals in that we can use trashracks -- essentially
10 grates across the turbines in order to prevent marine
11 mammals from entering. Their swimming speed is sufficient
12 that they're not going to get stuck on the grate. So that's
13 not a problem.

14 So we do have a solution to marine mammal
15 mortality. There may be other issues, like, you know --
16 seals are remarkably smart animals. I mean just from my own
17 personal observation.

18 I have a house on the coast of B.C., and
19 the fishermen shoot the seals. And when one of those seals
20 spots a fisherman with a rifle, they're gone. And so it may
21 be that marine mammals are smart enough that in fact they
22 know what to avoid and what not to avoid.

23 We do have considerable access since the
24 sluices are going to be open four times a day over the
25 turbines, so that gives marine mammals access in and out of
26

1 the basin. The tides themselves -- the wall section itself,
2 which is three-quarters of the length of the enclosure, is
3 submerged on the 20-25% highest tides. So there's
4 additional transparency in terms of the -- for marine
5 mammals.

6 But we don't know enough about this. And
7 so this is going to be a subject of -- this is going to have
8 to be studied.

9 Are there any comments or issues there on
10 any of these?

11 (No response.)

12 MR. ATIYA: Okay.

13 Resource enhancement and studies. The
14 entire project has a footprint of less than an acre. This
15 is one of the advantages of this kind of construction.
16 Normally these are massive objects. We either have
17 embankments with very large footprints or else caissons --
18 reinforced concrete boxes that are very large, of the order
19 of a minimum of 100 feet. And so replacing these by smaller
20 elements and the reduction of the footprint is something
21 that's important. And, of course, all these elements are
22 removable.

23 The parallel cycle we've talked about. The
24 Denil fishways along the Pennamaquan River -- the river
25 rather than the embayment -- are apparently, according to
26

1 Mr. Jameson, the Chairman of the Selectmen -- are in poor
2 condition. And what we would do is we would propose to
3 restore and maintain the Denil fishways. One of the walls
4 on the fishways apparently has collapsed.

5 We spoke about the potential productivity
6 due to pumping. I won't get into that further.

7 We also mentioned the potential increase in
8 salt marsh due to reduced wave action.

9 The invertebrate studies has to do with
10 actually improving the productivity of the inter-tidal
11 zones. We had consultation with -- I'm sorry, I'm getting a
12 bit tired here -- with Lindsay Tudor, who is a bird
13 biologist. And in fact, the improvement, the enhancement,
14 the increase of the number of invertebrates in the
15 inter-tidal zones might be beneficial to birds.

16 And so even though we wouldn't otherwise
17 have an impact on birds, you know, we would propose to -- we
18 would propose a shore bird study. But that's an auxiliary
19 issue.

20 So moving on to the final issues here, one
21 is recreational land use. We are -- There is a boat ramp on
22 the -- and we all met there yesterday. But there are actual
23 -- There is a tourism potential here which can contribute to
24 Washington County, and in particular to Pembroke.

25 If you look at Annapolis Royal, Annapolis
26

1 Royal gets 35,000 visitors annually. And so this is a major
2 -- this is a major -- this is a major potential source of
3 revenue for the Town of Pembroke. You know, what can we
4 estimate the projected potential in terms of tourism here.
5 10,000? Creation of 100 jobs?

6 You know, this would depend on the
7 community, whether the community in fact is interested in
8 tourism or whether it prefers to preserve the area as is.
9 So this would be done in consultation with the community.
10 If the community has no interest in tourism the plant would
11 be closed to visitors.

12 So we propose a study of current and
13 potential recreational use of the Pennamaquan River with
14 heavy consultation with the communities, including a Tribal
15 consultation, you know, because this would have an impact
16 there.

17 So any comments on recreational and land
18 use?

19 MR. BEYER: Yeah. This is Jim Beyer.

20 Although this isn't a wind power project,
21 in wind power projects, to kind of get to that -- answer
22 that same basic question on some of the lakes surrounding
23 wind turbines --

24 MR. ATIYA: Yeah.

25 MR. BEYER: --they do what are called user
26

1 surveys. You might look at some of the user surveys for,
2 you know, already permitted and proposed projects and take a
3 peek at those. And that would give you a pretty good handle
4 on what kind of work others have done to kind of answer that
5 same question but for a different project.

6 MR. ATIYA: Yeah. Very good. Yeah.
7 That's a helpful suggestion. And we will certainly, in
8 designing that, you know, we'll talk again and follow it up.

9 Commercial use of Pennamaquan River. There
10 is shellfish harvesting. There is rockweed harvesting. We
11 have talked about access to the project by -- to accommodate
12 commercial fishery. The footprint here is small.

13 We do have that time provided -- That ends
14 up being part of the operating cycle -- when in fact the
15 water is -- when they're between F and G here and K and L --
16 when in fact fishing vessels could actually fish right up to
17 the boundary of the turbines. And so if we alter this then
18 this will have to be looked at. And it's one acre of sea
19 floor.

20 The speed of the water, the flow is the
21 natural flow. And so if boats can handle the natural flow,
22 they can handle this.

23 Yes.

24 MR. PRICHARD: It's Dan Prichard again.

25 I help run the submerged lands leasing
26

1 program for the State of Maine, and so we'd be issuing some
2 lands lease for the --

3 MR. ATIYA: Yeah.

4 MR. PRICHARD: -- portion of the barrage
5 that's sitting on public lands.

6 MR. ATIYA: Yeah.

7 MR. PRICHARD: One of the issues that we
8 look at is minimizing the impact of the project on existing
9 commercial and recreational and other public trust uses in
10 the area. And you and I had exchanged emails I think at one
11 point, and probably conversed about to the extent that you
12 can, providing for free public access to, from and around --

13 MR. ATIYA: Yeah.

14 MR. PRICHARD: -- this facility so that
15 public use is disrupted to the minimum extent possible, with
16 the possible inclusion of adding an additional ramp on the
17 river side of the barrage so that small boat fishermen that
18 might go up into the river to clam or whatever wouldn't have
19 to go through a lock system.

20 MR. ATIYA: Yeah.

21 MR. PRICHARD: They could simply just
22 launch from land, like they do now on the current public
23 ramp.

24 So anyway, the point is that as you're
25 designing this project and looking at impacts and talking

26

1 with the local community, to the extent that you can design
2 your project to minimize disruption to the current uses, for
3 the whole range of what those uses might be, that's all to
4 the good.

5 MR. ATIYA: Yeah. And I appreciate your
6 input and we'll get a lot more of it as we move forward with
7 this project.

8 You know, as I said, one of the things that
9 we have not really looked at is the issue of very small
10 craft, kayaks and canoes. And that's something that has to
11 be addressed. So that would be sort of included in the
12 sorts of --

13 MR. PRICHARD: Yeah.

14 MR. ATIYA: -- in the kind of point that
15 you're making.

16 There are some actual advantages to having
17 an enclosure there in terms of providing, for example, safe
18 harbor during storms. And I know that the weather there can
19 be quite unpredictable. And so access to a situation where
20 there is good anchorage might be something also of value.

21 But we will do a commercial and
22 recreational study that will address those issues.

23 MR. WALSH: I'm Tom Walsh. I'm a reporter
24 for the Bangor Daily News who covers Washington County. I
25 have two questions that are related to the economics of this
26

1 project.

2 MR. ATIYA: Yeah.

3 MR. WALSH: The first is, in one of your
4 studies you indicate that in 2011 the average price of a
5 kilowatt hour of electricity in Maine was about 15 cents.

6 MR. ATIYA: Uh-huh.

7 MR. WALSH: You estimate the lifetime of
8 this project at 120 years. You estimate that during the
9 first 30 years, when you're doing the debt reduction on the
10 loans or the financing required, that you will be able to
11 sell kilowatt hours for eight cents, approximately eight
12 cents a kilowatt hour, which is a --

13 MR. ATIYA: Okay. Let me make a
14 clarification of that.

15 The eight cents a kilowatt hour is our
16 production costs assuming that the federal tax structure
17 stays as it is. Okay? So this is not the retail cost of
18 power.

19 MR. WALSH: But it's still related to the
20 15 cent figure?

21 MR. ATIYA: Yeah.

22 MR. WALSH: Okay.

23 MR. ATIYA: So what --

24 MR. WALSH: Let me finish my question.

25 Once the debt service is taken care of in

26

1 the first 30 years of the life of this 120 year project,
2 you're predicting that in the last 90 years of the project
3 you can sell a kilowatt hour -- or the value of a kilowatt
4 hour will be two cents --

5 MR. ATIYA: That's right.

6 MR. WALSH: -- per kilowatt hour.

7 I just have a question about on what basis
8 you make those projections.

9 MR. ATIYA: Okay. The basis of that
10 projection, the two cents per kilowatt hour is based on what
11 the power produced at Lorentz Tidal Power Plant sells for.

12 So if you use the DOE figures -- It
13 basically falls to maintenance and operation. If you use
14 the DOE figures you would conclude that that price would
15 fall to one cent per kilowatt hour. If you use what is
16 actually the case at Lorentz, it's 2.2 -- is it 2.2? 2.2 --

17 MR. VERRILL: Euros.

18 MR. ATIYA: 2.2 pence in terms of Euro
19 pence.

20 MR. VERRILL: 22 Euros per megawatt hour.

21 MR. ATIYA: 22 Euros per megawatt hour,
22 which is about half the cost of natural gas at its current
23 extreme low rate.

24 And this is an important aspect of this
25 project because this is a technology that can be implemented
26

1 now. It doesn't require -- it doesn't require research; it
2 doesn't require development. If we've got a license, you
3 know, we will find immediately we've got a turbine -- we've
4 got Alstom that is ready to provide the turbines and has
5 done the study on it, you know, and we've got several
6 construction companies that are ready to go on it.

7 And so, you know, this isn't speculative
8 stuff. We're not waiting for some breakthrough in the
9 future. You know, we can do this now. The resource
10 potential is enormous.

11 If you look historically at the potential
12 of barrages -- and this is what we've tried to avoid. We
13 are putting it across here because this is largely an
14 embayment, not -- you know, we're not enclosing a major
15 river here.

16 It was about 750 terawatt hours for the
17 project for which exists detailed engineering plans. That's
18 about seven percent of the world's current production. With
19 this kind of construction -- which was shown during the
20 Severn Tidal Power consultation to be about 50 percent
21 cheaper than the next lowest -- we can build shore-connected
22 lagoons, which are environmentally much less invasive than
23 anything that you put across an embayment, let alone an
24 estuary.

25 And so what that -- you can increase that
26

1 by about five to ten times. That means that this kind of
2 technology can produce, you know, roughly between 15 and 30
3 percent of the world's power generation. It can do it now.
4 It can do it cost effectively.

5 And the prices that we're talking about
6 here in Cobscook Bay are the cutoff in terms of lower
7 cutoff. When you go off into the upper bay or you go off
8 into Cotentin Coast by France or in the Severn, or in Ungava
9 Bay here in Canada, then the cost drops dramatically and
10 this technology becomes competitive with all fossil fuels
11 during the first 30 years, and better than all other sources
12 over the next 90-plus years.

13 MR. WALSH: Okay. Again this is Tom Walsh.

14 The second part of my question, which is
15 also economic: During one of the early filings on this
16 project with FERC you estimated that this project would
17 require \$70 million.

18 MR. ATIYA: Yeah.

19 MR. WALSH: What's your strategy for
20 seeking investors or coming up with that level of revenue?

21 MR. ATIYA: Okay. Let me just make a
22 correction. And then I'm going to hand this to Ted Verrill
23 here, who is our financial officer. So I wouldn't dare make
24 comment with him sitting here.

25 That cost was before we received Alstom's
26

1 estimates, which were much higher than we expected. We did
2 a very conservative estimate of the cost of the project,
3 both for the construction and for the turbines and
4 equipment. And it comes out to 120. And so that needs to
5 be -- that needs to be corrected.

6 MR. WALSH: Okay. Thank you.

7 MR. ATIYA: And so I'll turn it to Ted
8 Verrill here, who I think is in a --

9 MR. VERRILL: I'm not sure that you have
10 any further questions relating to economics. But it is a
11 fact that we have been modeling \$120 million as the cost of
12 the project.

13 Now that's a very conservative estimate and
14 it's based on very conservative numbers. So it's certainly
15 possible that it could be less than that. But that's
16 essentially what our expected cost of electricity that's
17 being produced is based on as well. So we still expect to
18 maintain the rate structure that Ramez has generally
19 outlined.

20 MR. WALSH: I guess I do have one more
21 question.

22 MR. VERRILL: Sure.

23 MR. WALSH: Where is that \$120 million
24 going to come from?

25 MR. VERRILL: Yeah, I guess we didn't
26

1 completely answer your question.

2 With respect to a typical project -- and
3 it's certainly varied because of the recession -- but
4 roughly 70 percent of the project costs will be financed
5 with debt and approximately 30 percent of the project costs
6 will be financed with equity. It can vary. It could go as
7 low as 60-40. But typically you have more debt than equity;
8 equity is a more expensive form of investment or capital
9 cost.

10 We would therefore typically approach a
11 variety of investors and lending groups who have finance
12 projects -- certainly hydro projects. Many of them have
13 been financed in this fashion. And actually most generating
14 facilities have been financed in this fashion.

15 Because of the recession and because banks
16 are unwilling to lend much over a very long period of time,
17 banks are not currently a great source. But the typical
18 sources now would be insurance companies, private equity
19 funds and so forth.

20 MR. WALSH: Thank you.

21 MR. LANDRY: This is Andrew Landry.

22 Just in terms of rates, going back to the
23 very beginning of your first question, I think the 15 cents
24 really reflected and all-in delivered price of energy plus
25 transportation costs. The eight cents that I think we've

26

1 talked about is just the energy component, which is very
2 comparable to what we're seeing as on-shore wind projects
3 today.

4 I think the real difference between this
5 and an onshore wind project is, you know, at the end of 20
6 years an onshore wind project typically has significant
7 capital replacement costs. You know, some of the facilities
8 like the site development are probably permanent, but the
9 turbines have to be replaced at a significant capital
10 replacement.

11 This project essentially when the debt is
12 retired gets to a point where there is no significant
13 capital replacement that has to happen for an extended
14 period. So essentially at that time the costs to the
15 investor of the project drops to a low number because
16 there's no longer a need to recover depreciation, only the
17 operating costs.

18 And I think my math would say that two
19 Euros per megawatt hour translate to about three- or
20 four-tenths of a cent per kilowatt hour, not cents.

21 MR. BEYER: Jim Beyer.

22 Just so you guys know, you know, it's not
23 required for the initial consultation or the second
24 consultation, but when you come in for your final Maine
25 Waterway and Development Conservation Permit Application you
26

1 will need to demonstrate financial capacity. So you'll need
2 the -- you don't have to have it finalized, but you're going
3 to have to put that package together.

4 MR. VERRILL: We intend -- this is Ted
5 Verrill at Halcyon Tidal Power.

6 We intend to put a package together for a
7 variety of parties who are interested in our financial
8 backing.

9 MR. ATIYA: Okay.

10 The final slide here deals with aesthetic
11 resources. In a way it's too bad I was unable to bring up
12 the model up here because it shows what we can do.

13 Going back to the original -- to the
14 diagram, what we would propose to do is there are -- we want
15 this project to actually be aesthetically appealing. You
16 know, we don't want to stick an eyesore in the water. So,
17 you know, we have a variety of alternatives.

18 For example, cement can be cast to look
19 like stonework. We could then, for example, put a fishing
20 bridge across the top here, you know, which would be a
21 covered fishing bridge, for example. So it would be sort of
22 -- look more like a traditional New England structure.

23 You know, we would put a building over the
24 powerhouse that would be built in a way which would be
25 consistent, you know, with the architecture in Pembroke. So
26

1 we would make every effort to actually produce something
2 that his architecturally attractive. And we would do this
3 in consultation with the community.

4 We also would like to purchase the H.R.
5 Foster tanks there, which are truly an eyesore. I hope
6 there's nobody here from H.R. Foster. But we would remove
7 those. And those may require some remediation. It's our
8 understanding that H.R. Foster were actually very careful
9 about spills so that I don't think that there's a problem.
10 But there might be, and this would require a separate study.

11 But the removal of the tanks and putting in
12 some landscaped area I think would be -- would actually
13 improve the general appearance of the area.

14 Yes.

15 MR. PRICHARD: Just a question. You said
16 at the highest tide.

17 Dan Prichard again.

18 MR. ATIYA: Yep.

19 MR. PRICHARD: You said at the highest
20 tides, 80 or 90 days a year --

21 MR. ATIYA: Yep.

22 MR. PRICHARD: -- this facility will be
23 awash

24 MR. ATIYA: Ah, that's a good question.
25 Yeah, I know where you're going.

26

1 MR. PRICHARD: Are you going to have a
2 catwalk or something elevated above --

3 MR. ATIYA: I know where you're going with
4 this.

5 What we have here is we have support
6 columns. And the support columns is they can sit higher
7 than the wall elements. Okay? And so we would put them
8 high enough that, you know, you could walk across there.

9 Of course, we could reduce the height of
10 the support columns, in which case they would become
11 submerged. We'd almost have to worry about safety issues
12 because we would have to have lights on the support columns
13 in order to make sure that vessels don't run into them.

14 MR. PRICHARD: I'm curious what it's going
15 to look like.

16 MR. ATIYA: I think Dr. Seeley would --

17 DR. SEELEY: Robin Hadlock Seeley.

18 Are you allowed by law to take the land
19 that you need on each side by eminent domain, or not?

20 MR. ATIYA: Well, actually, you know, we're
21 not -- this actually -- the extent of the project is below
22 the high tide watermark, you know, from one end of the
23 project to the other. One of the things that we would like
24 to do is purchase the H.R. Foster property, and we would
25 like to take a look at getting the property on the other
26

1 side as well.

2 Now I'm not -- I don't have -- I shouldn't
3 say anything about the legal issues. I think Dan Prichard
4 here and Drew Landry can speak to that issue.

5 DR. SEELEY: I just want to point out that
6 in Maine the inter-tidal is owned privately to the mean low
7 water mark.

8 MR. LANDRY: That's correct.

9 And this is being licensed under -- even
10 though it's not a traditional hydro dam run of river type
11 thing, it is licensed under FERC's regulations for
12 hydroelectric projects. And there are federal rights that
13 can be exercised under certain circumstances for acquiring
14 property. So, you know, I think as --

15 DR. SEELEY: What does that mean?

16 MR. LANDRY: There are eminent domain
17 rights. But, you know, they're subject to whatever the
18 applicable restrictions are on the exercise of them. But
19 it's federal. But we would obviously, you know, we'd be
20 looking at doing private commercial transactions and
21 wouldn't want to rely on those unless it was necessary.

22 And, of course, below the low tide those
23 would be within the area of the Department of Marine
24 Resources leasing, not unlike salmon pens and that sort of
25 thing.

26

1 MR. PRICHARD: Under our submerged lands
2 leasing requirements the lease-holder -- Let me start again.

3 This is Dan Prichard, Department of
4 Agriculture.

5 Under the state's submerged lands leasing
6 program the holder of a submerged lands lease is required to
7 have an interest in the upland property immediately adjacent
8 to the submerged lands lease site. So in this case you
9 would have to either own or lease or have some land interest
10 in the upland properties on either end of the barrage.

11 And as I mentioned earlier, there's kind of
12 an open question as to whether or not you might need some
13 sort of interest in the shore property on the river side --
14 the basin side. Since this is a new type of animal that's a
15 question that still needs to be answered.

16 Thanks.

17 MR. ATIYA: Thank you.

18 The final issue here is the cultural
19 resource study. And I don't mean this to be in the order of
20 importance, but in the order in which they were cited in the
21 Code of Federal Regulations.

22 So we did consult with the Historical
23 Preservation Commission and they indicated that the impact
24 should be small because the boundaries of the basin are not
25 going to be altered.

26

1 One of the things that would be inevitable
2 is that we would need taller poles. These would be wooden
3 poles for the transmission line. These would go along the
4 current right-of-way. And that, you know, since the poles
5 would have to be replaced, there would have to be an
6 archeological study along the transmission route.

7 So, you know, we want to actually -- we
8 would like to -- so this is sort of minimal.

9 Any issues or ?

10 (No response.)

11 MR. ATIYA: Okay.

12 I'd just like to say -- Yes.

13 MR. DIFFENBACHER-KRALL: I know FERC has
14 met with the Passamaquoddy Tribe and I'm sure they outline
15 some of their concerns.

16 It's my understanding, there's trust land
17 in the town of Pembroke by the Passamaquoddy Tribe; that
18 there are Passamaquoddy people living on this river; that
19 there are historical villages in this area. All that needs
20 to be identified, documented, and taken into consideration.

21 MR. ATIYA: Yeah. Much of that work
22 actually has been done. The thinking I believe of the Maine
23 Historical Preservation Commission was that these would not
24 be impacted because the shoreline would not be altered. In
25 other words, it's not like, for example, a dam where you are
26

1 actually submerging a new area and losing important
2 archeological resources. And there are historical -- there
3 are middens on the river. And in fact some of those are --
4 you know, some of that is mentioned in the pre-application
5 document.

6 MS. SEELEY: Robin Hadlock Seeley.

7 My understanding is there may possibly be a
8 difference between the Maine State Preservation Office's
9 understanding of where sites are and Passamaquoddy
10 understanding of where those sites are.

11 MR. ATIYA: Well, we are certainly planning
12 on carrying out a consultation that is inclusive. And so,
13 you know, let there be no mistaking about that.

14 I just want to say a couple of final words
15 about this project. This project is a flagship project. It
16 is intended to demonstrate both a low cost construction
17 technology and what we think is an environmentally sound
18 approach to developing a massive resource.

19 We are -- it's our position that we as a
20 planet are in trouble; that we do need to address the issue
21 of global warming and ocean acidification. And in fact,
22 ocean acidification may be an even more severe problem than
23 global warming; I'm just a physicist here, so this is But
24 that's our position.

25 A plant -- this sort of technology can
26

1 provide power for the first 30 years at a cost that is
2 comparable with fossil fuels -- at least coal, not very
3 cheap natural gas. At the end of 30 years it can provide
4 power at extremely low cost, below anything else. And in
5 fact it can subsidize the development of more expensive
6 power.

7 And so, you know, the significance of this
8 project goes way beyond just this project itself, you know.
9 And I hope that all of you and FERC will actually take that
10 into account in evaluating this project.

11 I'd like to thank everybody for their
12 attendance here. I didn't expect such a large group. And
13 those who are attending by videoconference, thank you.

14 MR. ROSS: My name is Ken Ross, K-e-n
15 R-o-s-s. I'm a landowner down near the proposed site, about
16 one-half mile away at one point. And my family has owned
17 there for 113 years. So we have followed some of the
18 history of the bay and what's happened to it and why.

19 And this leads me to our question that I'm
20 not sure I hear addressed. I'm not sure whether it can be
21 studied as such, or how it can be. But it's very important.
22 And it has to do with the special character of Cobscook Bay.

23 This is no ordinary saltwater bay, so I'm
24 given to understand. It's the last relatively unspoiled and
25 undeveloped -- relatively -- bay in the whole East Coast of
26

1 the United States. It is also uniquely productive because
2 of the flows of cold water from the Bay of Fundy and so on.
3 I don't understand it fully. But we know that it supports
4 some very valuable fisheries of lobsters and scallops and
5 urchins and other fish.

6 And so my question has to do with whether
7 it is wise to take such a rare -- a really rare, one of a
8 kind resource and start turning it into an industrial zone
9 for production in this case of electric power.

10 I understand that this particular project
11 would produce about eight-tenths of one percent of the power
12 that Maine uses. And I don't know over what period of time
13 and so on. But I thought I saw that figure in the specs
14 somewhere.

15 The question would be whether it is worth
16 it; whether it makes sense to start the process of turning
17 this highly unusual and high valuable bay -- not only highly
18 valuable for fisheries but also for recreation, tourism and
19 so on. This tourism, there are people who want to go there
20 not just to see dams but to see natural beauty and the fish
21 and to see the wildlife, birds and so on. That needs to be
22 taken into account.

23 Is it wise to do that? I think that's
24 highly questionable. And there's a precedent for my
25 concern. And that is the causeway that was built back in
26

1 the '30s or '40s to take the road across to Eastport. You
2 used to go across a bridge in a different location.

3 After they built that causeway, according
4 to my father, who spent his summers there on Cobscook Bay
5 during the 1920s, he said that that shut off much of -- not
6 all -- the flow which was sort of semi-circular around Lubec
7 and Eastport. And the fin fish population just dropped
8 right off. You could hardly catch a cod or a haddock in
9 Cobscook Bay after that. And the number of sea birds went
10 down accordingly. And the herring fishery went down
11 accordingly, partly, presumably, because that flow was
12 interrupted and disrupted and reduced.

13 Well, I see this as a possible, maybe
14 likely addition to another part of the bay being shut off,
15 or at least altered in terms of water flow and resource flow
16 and so on. That's up to you biologists to measure and see
17 just what exactly is happening. But I see that.

18 And then I see something else that seems to
19 me highly relevant. And that is: Is this going to be the
20 last one? Why not the other bays in Cobscook Bay? Why
21 don't we dam them all off? And what will the effects of all
22 these be? My guess would be it's going to be a steady
23 decline of the wildlife and the fisheries of the bay.

24 So I think -- I can't prove that. But
25 that's my guess, that one way or another it's going to take
26

1 them all further downhill, every dam that's built.

2 Is it worth it to start that process?

3 Granted this may be cheap electricity. But we're going to
4 pay quite a price for that. There aren't -- they don't make
5 any more bays like Cobscook Bay.

6 And so I know you have to deal with
7 speculation and whether further dams might be built and
8 where and why and so on. But the tidal height there is one
9 of the considerations that makes that a logical place to
10 keep on building such projects as this.

11 And may I say I give the proponents credit
12 for trying to make it as undamaging a mechanism as can
13 possibly be. They're trying their best to make it
14 worthwhile and not environmentally damaging. But I doubt
15 very much that this would do any more than begin to turn
16 this area into a big industrial zone.

17 And I just thought of one more
18 consideration to that. That tourism and other sources of
19 economy are not just what we heard briefly talked about
20 here. People build along the shore and the taxes go to the
21 towns and so on, and the building process provides jobs for
22 the carpenters and other people. That's an important part
23 of Washington County's economy.

24 People go to Washington County because it's
25 relatively unspoiled, great scenery and some wildlife, still

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1 a few birds and even a few fish to catch still. And that's
2 of value. How much do we want to give that up? Do we want
3 to turn this into another bay like they have in New Jersey
4 or somewhere down below? Or do we want to keep this.

5 And we're really in a sense, stewards of a
6 national -- national quality resource here, a national
7 natural treasure. So we ought to think very carefully
8 before we take another step beyond what was already done
9 with the Eastport causeway in the direction of taking this
10 whole thing downhill as a fishery and an area of natural
11 beauty and natural attraction and tourism and other benefits
12 that go with it.

13 Thanks.

14 MR. PALSO: Does anyone have any other
15 comments?

16 We'll get you and then

17 MR. JOHNSON: Mike Johnson, National Marine
18 Fisheries Service.

19 I've got a question that related to
20 potential impacts to physical and chemical and biological
21 characteristics of the estuary.

22 MR. ATIYA: Yeah.

23 MR. JOHNSON: Several times during the
24 presentation today you mentioned that the flow, the river
25 flow won't be altered.

26

1 MR. ATIYA: Yeah.

2 MR. JOHNSON: And I think that you're
3 referring to the average flow during a tide cycle, because
4 it seems to me -- and forgive me, I'm a biologist and not a
5 physicist or hydrologist. But if you construct a dam across
6 the river with turbine openings as well as the sluiceways --

7 MR. ATIYA: Yeah.

8 MR. JOHNSON: -- you are reducing the total
9 area for the river to pass, correct?

10 MR. ATIYA: You're absolutely correct.

11 MR. JOHNSON: And on top of that, you're
12 basically holding water back at high and low tides for an
13 hour or an hour and a half -- I'm not sure how long, but
14 there's a period of time where water is not flowing through.

15 MR. ATIYA: Yeah.

16 MR. JOHNSON: And so combined with the
17 reduced area of flow and the fact that you're essentially
18 having to accelerate the water through the dam, through the
19 openings in order to meet the end of the next tide cycle,
20 you are going to have a change in flow, the velocity of the
21 river in that area. Presumably it will be less along the
22 sides of the dam and an increased velocity around the
23 openings of the dam.

24 And in fact one of your tables in the PAD
25 sort of indicates that the velocity is increased at the edge

26

1 rafters.

2 MR. ATIYA: Yeah.

3 MR. JOHNSON: So I guess --

4 MR. ATIYA: Yes, that's the -- I'm sorry.

5 MR. JOHNSON: I just want to confirm that I
6 understood it correctly that what you mean by no change in
7 the flow, the river flow, you're talking about the average
8 flow during -- from one tide cycle to the next and not
9 specifically at the opening of the dam.

10 MR. ATIYA: Well, you know, let me answer
11 it this way, because this is an important point.

12 You know, first, if you look at the slope
13 of these lines, they indicate -- they're a measure of the
14 flow. So you can see that the slope of the - within
15 Cobscook Bay and across that area is the same as the slope
16 inside.

17 So the net flow is -- the rate, the flow
18 rate is going to remain unchanged. You know, it will be
19 changed here. But as I indicated, you know, starting the
20 turbines sequentially can round this off so that, you know,
21 so you don't get this sort of slack water time. You know,
22 we can adjust that.

23 The other aspect of this is one of the
24 reasons why we chose 16 turbines, you know, rather than
25 putting in two large ones, is want it to span the width of
26

1 the channel. So effectively what we're using is we're using
2 a very large majority of what is actually available there.

3 And so, you know, it's like, you know,
4 there's some quantitative estimates in here. And I hesitate
5 to just -- to bring up these figures. But I think that
6 somewhere in the order of 80 percent of the water that flows
7 in and out of Pennamaquan River would flow through that very
8 same cross-section that the turbines are in.

9 And so therefore the fact that you have the
10 flow rate being the same and the fact that most of the water
11 would flow through that area anyway, you know, minimizes it.
12 And that's one of the reasons why we chose to put so many
13 turbines is because we wanted small turbines and we wanted
14 to span as much of the area, the cross-sectional area of the
15 channel as possible.

16 So, you know, there will be -- there will
17 be reduced flow. Obviously there will be no flow where the
18 wall is. But there's little flow there anyway. And there
19 are other factors as well. And this will come through
20 modeling. You know, you have frictional issues, you know,
21 with the flow of water so that normally you do not, you know
22 -- but if you just deal with it in terms of just
23 cross-sectional areas, those are places where most of the
24 flow happens anyway in terms of -- yes.

25 MR. KARTALIA: Well, is it okay if we stay
26

1 on this subject for a couple more back and forths and then
2 go to your -- okay.

3 MS. SEELEY: Robin Hadlock Seeley.

4 This is what confuses me. There certainly
5 is flow along the edge of the shore.

6 MR. ATIYA: Yes.

7 MS. SEELEY: Just thinking of the Ray
8 property, if you put a wall across there the current -- the
9 outgoing current is not going to go along the shore directly
10 the way it used to. It's going to come down and hit that
11 wall and be deflected --

12 MR. ATIYA: Yeah.

13 MS. SEELEY: -- and come out.

14 MR. ATIYA: Yeah.

15 MS. SEELEY: So the flow along that wall is
16 going to be different, along that shore is going to be
17 different.

18 MR. ATIYA: Yes. That's right.

19 MS. SEELEY: So what's going on in the
20 middle -- I mean I'm just a biologist, not a physicist --
21 but what's going on in the middle seems like it may be
22 similar, but what's going along the edge will be very
23 different.

24 MR. ATIYA: Yeah.

25 MS. SEELEY: So if you have elvers coming
26

1 upstream and they're orienting into the flow that's coming
2 along the shore, that current now is going to be blocked;
3 it's going to be diverted coming into the middle.

4 Have I got that right?

5 MR. ATIYA: Yeah. That's right. And there
6 will be -- you know the change in terms of the flow pattern
7 will be mainly close to the structure itself.

8 MS. SEELEY: So I'm just saying, to say
9 it's going to be unaltered doesn't seem to be quite correct.

10 MR. ATIYA: Well, okay. You know, yeah,
11 you're absolutely right. There is no -- any time you do
12 anything, you know, you're going to alter something. You
13 know, what we were -- but, you know, on the other hand to
14 say it's going to alter it, you know, is perhaps to miss the
15 greater point, which is if you actually look at the flow
16 patterns with this project versus the flow pattern when in
17 the absence of the project, the differences will be local.
18 Okay?

19 So we're not being really -- language
20 unfortunately is an imprecise thing. And, you know, when we
21 actually sit down to do this what we need is a mathematical
22 representation of what's happening. And then, you know,
23 then there won't be any of these sort of natural ambiguities
24 of ordinary language.

25 MR. KARTALIA: If I could just make a
26

1 comment. I'm hopeful that the study that you're proposing
2 would give sufficient detail in the modeling to -- and
3 produce something such as maps with very detailed velocity
4 vectors and flow patterns in the existing river condition at
5 a wide range of tidal cycles or tidal stages --

6 MR. ATIYA: Yes.

7 MR. KARTALIA: -- and then modeled
8 accurately and with good flow diagrams of with the project
9 as proposed.

10 MR. ATIYA: That's exactly --

11 MR. KARTALIA: So that people can see
12 exactly what the difference would be --

13 MR. ATIYA: Yeah.

14 MR. KARTALIA: -- where it would be.

15 MR. ATIYA: Absolutely.

16 MR. KARTALIA: Okay.

17 MR. ATIYA: Absolutely.

18 MR. LABERGE: One point on this average
19 flow being the same. I mean the average flow is ΔQ
20 divided by ΔT . And ΔQ is the amount of water --
21 or ΔV over ΔT . And ΔT is the time. If
22 you're losing an hour at high tide and losing an hour at low
23 tide, your ΔT is less; therefore your average velocity
24 -- average discharge would be greater.

25 On this point of -- essentially when you
26

1 put the turbines in -- and I still question 16 turbines
2 versus four or five. But the fact is that you're funneling
3 all the flow towards the middle of the channel. And in the
4 middle of the channel is where you're going to get higher
5 velocity than normal. And that's a big difference in the
6 flow pattern.

7 I agree with Steve that once you do the
8 modeling and you do a characterization of the sedimentation
9 around the dam, then you would have to calculate what the
10 sedimentation rate would be.

11 But to say that just because the slope's
12 the same, I mean the basic math is that it's ΔV over
13 ΔT and that it's going to be greater than what it is
14 naturally and it's going to be concentrated in the middle.

15 MR. ATIYA: Well, actually when you're
16 talking about ΔV over ΔT you're talking about an
17 acceleration.

18 MR. LABERGE: ΔV , volume.

19 MR. ATIYA: Oh, ΔV over ΔT .
20 Okay. But if you were talking about ΔQ over ΔT ,
21 then that's an increase or a decrease in the net volume.
22 It's a volumetric -- it's a flow acceleration.

23 No, let me just answer it this way: You
24 know, this was actually -- this was done in great detail,
25 you know, in 137 second intervals, you know, by Alstom

26

1 Power, which, you know, whose reputation is beyond question
2 as far as the technical aspects of these things are
3 concerned. And so this is correct.

4 MR. DIFFENBACHER-KRALL: I wanted to follow
5 up on Mr. Ross in mentioning the causeway. I want to remind
6 FERC that you have a trust responsibility to the
7 Passamaquoddy Tribe of protecting their interests.

8 You know, one in the Maine Indian Clan
9 settlement, you know, one of the things Senator Melcher, who
10 was chair of the Senate Indian Affairs Committee said:
11 Nothing in this agreement shall cause the acculturation of
12 the Passamaquoddy people.

13 Already there's been tremendous
14 acculturation that the Wabanaki have suffered in the State
15 of Maine. It's acute on aquatic resources because of the
16 dams and other changes that settlers have done to this
17 state.

18 I think already the Passamaquoddy people --
19 Mr. Ross talked so eloquently about what happened that
20 causeway, Route 190. Well, you look at the St. Croix River
21 itself and all those dams and what that's done to resources
22 that the Passamaquoddy people traditionally relied upon for
23 thousands of years. I think you ought to think what is the
24 cumulative impact.

25 And now this very healthy -- someone
26

1 described it -- I haven't done the research, but we heard
2 today someone offered that this is perhaps the most
3 unspoiled bay like this on the eastern coast of the United
4 States.

5 That Passamaquoddy interest has to be
6 protected. You're obligated as the Federal Government. So
7 I just want to make sure to remind the Federal Government of
8 doing that here.

9 And I know I've had conversations,
10 especially with one Passamaquoddy elder in particular who
11 talks about the horrible impacts of that causeway. When you
12 start causing changes in flow and changes in aquatic
13 systems, they can be very severe. And it would be just
14 tragic to have another abundant natural resource in this
15 area in the State of Maine damaged through imprudent acts.

16 MR. PALSO: Any one?

17 (No response.)

18 MR. PALSO: Okay. One last thing, then.

19 Regarding the deadline coming up on
20 November 13th for comments and study requests, for how many
21 of you is that going to be too close, is that going to be a
22 burden to have anything that soon?

23 We have one -- Would you mind just stating
24 you names in the mike and we'll get this on the record and
25 just pass it on.

26

1 MS. SEELEY: Robin Hadlock Seeley. The
2 November 13th deadline will be a difficulty.

3 MR. JOHNSON: Mike Johnson. We will
4 attempt to make the November 13th, but we'd prefer to have
5 more time if it's available.

6 MR. VIAR: Jim Viar, DP. There's no way.

7 MR. SHEPHERD: Steve Shepherd with the U.S.
8 Fish & Wildlife Service. Particularly in light of the fact
9 of coordinating with other agencies, the November 13th
10 deadline would be very difficult to meet.

11 MR. SWAN: Gail Wippelhauser and Brian Swan
12 from DMR, they won't be able to make the deadline either.

13 MR. VERRILL: Understanding that several
14 agencies and other concerned individuals would like an
15 extension of that deadline, I'd like FERC to take into
16 consideration the fact that it isn't necessarily the case --
17 or hopefully it isn't necessarily the case that you have to
18 extend all other deadlines as well. We'd like to maintain a
19 certain amount of, you know, lockstep kind of expected
20 fashion to complete our project studies, et cetera.

21 Thank you.

22 MR. PALSO: Okay. Thanks a lot.

23 If there are no more comments -- Back
24 there.

25 MR. SWAN: Brian Swan. How much more
26

1 additional time can we expect to get?

2 MR. PALSO: I am not sure. I mean I'm just
3 going to pass this on to my superiors and let them all know.
4 But since you all made such a case here, you know, I hope it
5 will be very persuasive.

6 Okay. If no one has anything else, we'll
7 close the meeting.

8 Thank you very much for coming.

9 (Whereupon, at 3:32 p.m. the scoping
10 meeting in the Pennamaquan Tidal Power Plant Project was
11 adjourned.)

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