

1 APPEARANCES (CONTINUED):

2 Raleigh Wilson, FERC-Indian Tribe Liaison
3 Fred C. Winchell, Biologist, contractor for FERC
4 Russ Howison, Biologist, PacifiCorp
5 Patrick Higgins, Kier Associates
6 Eli Asarian, Kier Associates
7 Rebekah Sluss, EPA Director, Quartz Valley
8 Indian Reservation

9
10 Kayla Super, EPA Assistant, QVIR
11 Emmy Lincoln, Quartz Valley Board member
12 Harold Bennett, Vice-Chairman QV Board
13 Aaron Peters, Chairman Quartz Valley Board
14 Frieda Bennett, Quartz Valley Board member
15 Roy Lincoln, Quartz Valley Board member
16 Lisa Carle, Quartz Valley Board member

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19 REPORTED BY: DANIEL A. HUMPHREY, CSR 5480

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21 EXHIBITS

22 Printout of PowerPoint presentation: Klamath
23 Hydroelectric Project: Relicensing and Why
24 Decommissioning Should Be Considered

25

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

2 REBEKAH SLUSS: Welcome everybody, and thank you
3 for coming. I thought we could just go around and do
4 introductions. And I will also pass around the sign-in
5 sheet for our consultants Kier and Associates. They have a
6 presentation for you, and also counsel members will be
7 speaking.

8 JOHN MUDRE: Okay, what we talked about before --
9 this is John Mudre -- to state your name for us. Speak so
10 we will have in the record who said what.

11 REBEKAH SLUSS: Okay.

12 JOHN MUDRE: So we attribute things properly.

13 REBEKAH SLUSS: I am Rebekah Sluss. I represent
14 Quartz Valley Indian Reservation as the EPA Director.

15 FRED WINCHELL: Fred Winchell, contractor for
16 FERC. I'm working on aquatic resources.

17 JOHN MUDRE: My name is John Mudre, and I'm the
18 Project Coordinator for the relicensing of the Klamath
19 Project. I work for the Office of Energy Projects.

20 RALEIGH WILSON: Raleigh Wilson, I'm with the
21 Commission as tribal liaison. I appreciate you all having
22 us here. Look forward to talking with you.

23 LISA CARLE: Lisa Carle, Quartz Valley Business
24 Counsel member.

25 EMMI LINCOLN: Emmi Lincoln. I'm a Quartz Valley

1 Board member.

2 HAROLD BENNETT: Harold Bennett, vice chairman of
3 Quartz Valley.

4 AARON PETERS: Aaron Peters, chairman of the
5 Quartz Valley.

6 FRIEDA BENNETT: Frieda Bennett.

7 KAYLA SUPER: Sheila, EPA Assistant, Quartz
8 Valley.

9 RUSS HOWISON: Russ Howison from PacifiCorp. I'm
10 here as an observer.

11 ELI ASARIAN: Kier Associates, Eli Asarian.

12 JOHN MUDRE: This is John Mudre again. I just
13 wanted to say, I know it's sort of awkward to have the guy
14 here typing and you saying your name, but it's really the
15 only way to make sure that we get down everything and have
16 it on the record so we can rely on this information when we
17 are making our recommendations to the Commission.

18 Did you want to start out?

19 REBEKAH SLUSS: Well, I actually thought we should
20 start out -- go ahead.

21 JOHN MUDRE: Basically I want to figure out how
22 you want to proceed with this. I think from our standpoint
23 we are here and, you know, if you have questions about who
24 we are or what we are doing or what the process is, we will
25 be glad to talk to you and try to tell you that information.

1 But we are very interested in hearing about your
2 people, your culture, your religions, and your concerns
3 about the Klamath Project relicensing. So that's in a
4 nutshell why we are here and what I'd like to see get
5 accomplished.

6 But, Rebekah, if you have a particular order you want
7 to go in, you just lead the way for now.

8 REBEKAH SLUSS: Well, I think first of all,
9 originally as you know from our mail correspondence we had
10 some issues with this type of government-to-government
11 consultation. And I don't know what Harold -- you want to
12 say.

13 HAROLD BENNETT: I was feeling this really isn't
14 government-to-government. We asked to be government-to-
15 government. The tribe speak to FERC, and not the tribe
16 speak to FERC and the community. Our community is our
17 members, but not the outside members, because we have real,
18 I don't know, I guess problems with our outside community
19 members and with the tribe. Any time the tribe wants to do
20 something, we get questions and eyebrows looked upon us. I
21 guess we live in a difficult spot and situation where our
22 tribe is, and the agricultural lands around us. Dealing
23 with water, this is a very sensitive issue.

24 And I kind of thought this is meeting under protest, I
25 should say. Because I'd like us to have a meeting

1 government-to-government, to whereas, you know, we are
2 demanded to meet with the public also. Because we might not
3 be able to say everything that we could have said if -- and
4 people show up, my neighbor, what not. He might be really
5 great neighbors and we have very different issues on
6 concerns of water.

7 JOHN MUDRE: Yeah. I understand those concerns.
8 But under our regulations this is really the only way that
9 we can do it. If it comes to the point where we are
10 discussing locations of sensitive resources, things like
11 that, we can go off the record in those circumstances. But
12 as a general rule, we need to do it, you know, in the public
13 view, basically.

14 I guess from your standpoint we are sort of lucky here
15 in that we just have one person that's, you know, Russ,
16 that's from the public or, you know, another party to the
17 proceeding. And again I do understand your concerns.
18 You're not the only tribe that has raised them, but we have
19 looked at this, our lawyers have looked at this, and the
20 direction that we have is that this is the way we have to do
21 it.

22 RALEIGH WILSON: Harold, for my part, your liaison
23 for the Commission, because we are sort of a judicial body,
24 I can't be a tribal advocate. It's important for me to
25 regard your letter initially with your sort of boundaries

1 that you wanted for government-government consultation --
2 sorry, sorry, Raleigh Wilson -- for you to tell us now sort
3 of how you feel about this meeting.

4 One of my jobs will be to help sort of insure
5 successful implementation of the Commission's new tribal
6 policy in our commitment to government-government
7 consultation.

8 As you can tell, we do that in a bit of a tension with
9 a court reporter and needing to be on the record because of
10 our court nature and our regulations governing ex parte
11 communications. But it is important for us to continue to
12 hear how you guys feel about that and how you feel about
13 this meeting so that I can take that back to the
14 commissioners and our legal staff, and as people continue to
15 think about the best way to implement this and ways to go
16 forward. It's where we have arrived at now, and the way
17 that we can feel we can do and still be consistent with our
18 other governing statutes. But it's important for you to
19 keep telling us how you feel about it.

20 JOHN MUDRE: This is John Mudre again. I just
21 wanted to add one point of clarification.

22 We do -- the reason we have to meet at public notice,
23 our meetings and have transcripts is because the license
24 application has already been filed. This is a post filing
25 in a contested proceeding. If this was a pre-filing

1 meeting, we could meet separately and we do meet separately
2 with tribes one on one. But the problem, I mean the problem
3 is that's not the case here. The case here is it is
4 post-filing, so we have to meet under these circumstances.

5 DAVID BRADFORD: David Radford. Can you all hear
6 me?

7 JOHN MUDRE: Yes, David.

8 DAVID BRADFORD: I'm the lawyer from the tribe.

9 We wrote a letter to you prior to this meeting back on
10 August 12th. And we identified some exceptions to the
11 regulations that do allow ex parte, off-the-record meetings
12 with elected tribal officials and non-party tribal
13 officials. And we argued in the letter that some of these
14 exceptions could apply to this meeting. And I don't know
15 that we ever received a response to that letter.

16 REBEKAH SLUSS: We did receive a response here.
17 I'm sorry, I didn't let you know.

18 JOHN MUDRE: This is John Mudre. We did look at
19 your arguments, and our lawyers looked at them, and
20 basically the conclusion was that they didn't really apply
21 in this circumstance.

22 REBEKAH SLUSS: I'm going to fax you that letter
23 right now, David, just for your --

24 DAVID BRADFORD: I never saw a written response,
25 so I didn't know what the basis for rejection of the

1 application was.

2 REBEKAH SLUSS: That will be about five minutes.

3 DAVID BRADFORD: That's fine. Obviously it's not
4 going to get resolved right now.

5 RALEIGH WILSON: David, this is Raleigh. I think
6 I reviewed that letter at one point. I don't remember all
7 the specific exemptions at the time. There were a couple
8 that didn't quite fit. I think the elected members thing
9 had to do with written comments. But as John indicated
10 earlier, the biggest issue for us has to do with the timing
11 of the consultation in relationship to the filing of the
12 license application. And in the Commission's mind a formal
13 contested proceeding being underway, and given that, we were
14 not comfortable moving forward under any of those exemptions
15 and instead took something of a conservative view, and
16 wanted to ensure that all communications were on the record
17 and available to decision makers. And again I recognize
18 that presents a tension for government-to-government
19 consultation. But it's a legal decision to try and comply
20 with those regulations.

21 I guess when Rebekah sends you the letter, you can see
22 our more specific recommendations.

23 DAVID BRADFORD: Obviously I can't really respond
24 in detail because I don't know exactly -- I understand in
25 general the idea of being conservative and having a

1 contested proceeding and wanting to protect the record. But
2 as far as the details of how those specific exemptions would
3 apply in this situation, without -- I'll have to take a look
4 at your response.

5 RALEIGH WILSON: David and Harold, when you get
6 that letter, you know, the record is -- for to you write us
7 a response.

8 DAVID BRADFORD: Sure.

9 RALEIGH WILSON: So, and of course when we get
10 that, we will certainly think about it and think about the
11 implementation of our overall tribal policy.

12 DAVID BRADFORD: Okay.

13 REBEKAH SLUSS: I was wondering, too, just for the
14 benefit of the tribal counsel if you could provide just a
15 background and overview of FERC. Just a little general
16 description.

17 JOHN MUDRE: Okay. Sure. This is John Mudre.

18 Federal Energy Regulatory Commission is composed of
19 five commissioners that are appointed by the president,
20 confirmed by the senate. They run staggered five-year
21 terms, I think. The Commission has authority under the
22 Federal Power Act to regulate the non-federal hydropower
23 system. FERC issues licenses for hydropower projects,
24 non-federal ones. Can have terms ranging from 30 to 50
25 years in length.

1 In addition to licensing the hydroelectric projects,
2 the Commission also has a compliance group under the Clean
3 Hydropower Program. Once the licenses are issued, the
4 compliance group makes sure that the licensees are operating
5 the projects under the terms of the license that they have.

6 And the third element of our hydropower program is the
7 dams, Division of Dam Safety and Inspections. And they make
8 sure that the licensed projects are safe -- public safety,
9 that all the engineering stuff is how it should be so we
10 don't have big accidents with dams, you know, falling over
11 in earthquakes and things like that. It's a very good
12 system. We have had a very good record in terms of dam
13 safety.

14 So that's who the Commission is and what the Commission
15 does.

16 In terms of relicensing hydropower projects, we now
17 have three different processes that can be used. We have
18 what's called our traditional license process which was what
19 we have been doing all along until about seven or eight
20 years ago. They came up with an alternative licensing
21 procedure, ALP, and just about a year and a half ago we had
22 other process, the integrated licensing process.

23 The changes are being made to streamline the process to
24 better bring in public and agency comment early on into the
25 process so that we end up with a better license in a shorter

1 period of time.

2 This -- the relicensing for this project is following
3 the traditional process. The fishery of PacifiCorp has had
4 lots of meetings to get input on study plans and everything.
5 So they call it a traditional plus, and it's had a lot more
6 outreach to agencies and NGO's, things like that, than your
7 standard traditional process. But in terms of this
8 perspective as to how this application is being processed,
9 it's the traditional process.

10 Licensing starts when, from our standpoint, when an
11 application is filed with the Commission. In this case the
12 application was filed back I think the end of February of
13 this year. Once we get a license application in from an
14 applicant, we look it over, make sure that all of the
15 elements that are required by our regulations are in there.
16 And when we do that, after we do that and we are satisfied,
17 we send out a notice saying that we have accepted the
18 application.

19 In this particular instance we sent back a letter
20 saying that a few things were missing and requested some
21 information about those, and they sent that information in,
22 and we accepted the application.

23 What we did next is to conduct scoping meetings to
24 identify what the issues were that we need to consider when
25 we're doing our environmental analysis under NEPA. We are

1 going to be doing Environmental Impact Statements to look at
2 the project as it's proposed and also difference
3 alternatives to the project. So we will be doing those
4 studies. To do those studies we need lots of information
5 about a lot of different resource areas.

6 We reviewed the application, like I said. We determine
7 everything needs to be there from a procedural standpoint
8 was there, but we are also looking now at whether there is
9 additional information we needed that we are going to ask of
10 the licensee to help us have the information we need to do
11 our environmental analysis.

12 We will be coming out with an additional information
13 requests that asks the licensee to give us that information.

14 The other thing that we were looking at right now is
15 that we are looking at when we issued the notice statement
16 that we got the application, we asked different agencies,
17 the public, the tribes, if there were any additional studies
18 that they thought needed to be done to support this
19 licensing application. We have got a number of additional
20 study requests. We are looking at those and deciding, do we
21 need this information, do we already have this information,
22 that sort of thing.

23 So we will be coming out soon with a response to those
24 various requests. I think we had about 180 additional study
25 requests that people asked us to require of PacifiCorp. So

1 we are going to come up with --

2 PATRICK HIGGINS: Did you just say you were going
3 to require 180 studies of PacifiCorp?

4 JOHN MUDRE: No, that's how many requests we got
5 in.

6 PATRICK HIGGINS: Okay, thank you.

7 JOHN MUDRE: We have done a lot of studies
8 already. I think everyone would acknowledge that. There
9 was a number of groups that don't think they did enough, and
10 they told us about those.

11 So based on our review of those documents and
12 everything in the record so far, we are going to issue what
13 we call Scoping Document II which is sort of our final
14 listing of the things we are going to look at and consider
15 as we begin the preparation of our Environmental Impact
16 Statement.

17 We -- the other thing were going to do is once we get
18 all this information back from the licensee, and we think we
19 have everything we need, we will issue a notice, what's
20 called a Notice of Ready for Environmental Analysis. That
21 tells everyone we have got all the information we think we
22 need to begin the preparation of our report. So that it
23 will be coming out.

24 Then we will put together a draft Environmental Impact
25 Statement. Then we will send that draft Environmental -- or

1 DEIS -- to all the parties that have requested to be on the
2 list that have been involved. It will be wide distribution.

3 There will probably be a 45-day comment period that
4 people can look at it and see if they think we have covered,
5 everything that we should have covered, that our analyses
6 were correct, and any other comments they want to give us.
7 Once when get those comments back, we look at them, consider
8 them, and prepare a final Environment Impact Statement.

9 Then the final EIS will be used by the Commission to
10 help them make a decision as to whether and under what
11 conditions they should issue a new license for the Klamath
12 Hydroelectric Project.

13 So that's in a nutshell, that's the FERC and the
14 licensing process.

15 I guess I can add to that, that once a license is
16 issued a couple of things can happen. PacifiCorp would have
17 to either accept a license or decline a license as it's
18 written. They have an option to not accept the license if
19 they don't like the terms and conditions that are put into
20 the license.

21 The other thing that can happen is that PacifiCorp or
22 any of the parties to the proceeding, people that have
23 intervened in the proceeding, can request rehearing of the
24 Licensing Commission. If they think the Commission's
25 license wasn't everything that it should be and request that

1 it can be reconsidered, based on this element or that
2 element.

3 Once we get the rehearing requests in, they look at
4 those and they decide, well, do we do it or should we make
5 some tweaks and changes based on those rehearing requests.

6 In a nutshell, that's the process. If you have any
7 questions, I'll be glad to try to answer them for you.

8 RALEIGH WILSON: This is Raleigh Wilson.

9 Let me highlight a couple other things that John
10 mentioned that will be, I think, of particular interest for
11 the tribe.

12 As John said, we are in the process of considering
13 additional study requests, and I believe the Quartz Valley
14 Indian community submitted a few of those. So the timing of
15 this consultation will be really good for you all to provide
16 us any other background information on your additional study
17 requests, or any other things that you may have learned or
18 thought about since you submitted them because we are now in
19 the consideration process for those.

20 Then, also, these are some things that your attorney
21 will probably tell you, but in addition to the DEIS comment
22 period, after we issue our Ready for Environmental Analysis
23 Notice, once we have got all the information in front of us,
24 there will be a 60-day time period after that for the Tribe
25 to submit recommendations under Section 10(a) of the Federal

1 Power Act. And those are recommendations that will consider
2 -- would it be the DEIS?

3 JOHN MUDRE: Right.

4 RALEIGH WILSON: We will consider them in the DEIS
5 and whether or not they should become a part of the staff's
6 proposal for what the license should look like.

7 JOHN MUDRE: That is an important thing, and I
8 forgot to mention it, but yeah. And at the same time it
9 also, the different other agencies can provide their
10 preliminary terms and conditions that they want us to look
11 at, consider for the license.

12 PATRICK HIGGINS: This is 60 days after the final
13 EIS?

14 JOHN MUDRE: No, after the Ready for Environmental
15 Analysis. That will request in the title, it says we are
16 requesting terms and conditions, et cetera, et cetera.

17 REBEKAH SLUSS: John -- this is Rebekah Sluss --
18 you said the scoping document is going to be coming out
19 because it's supposed to have already come out.

20 JOHN MUDRE: They issued the Scoping Document I, I
21 think back in April, I think. Scoping Document II is going
22 to reflect the comments that we received on Scoping Document
23 I and other information that's in the record.

24 REBEKAH SLUSS: It was my understanding that
25 Scoping Document II, it was also behind?

1 JOHN MUDRE: Behind schedule?

2 REBEKAH SLUSS: Yeah.

3 JOHN MUDRE: Oh, it's behind, yes. It is behind
4 our original schedule. We did get 180 additional study
5 requests in. Lots of comments. We take them all seriously.
6 So we are running behind schedule, but we need to consider
7 all this information to make a decision rather than just to
8 make a decision according to some schedule.

9 REBEKAH SLUSS: I appreciate that. Because there
10 are other processes that are going on. They are more
11 wanting to hear the schedule, not all of the other things
12 that are happening studywise.

13 So is that going to push back the license in 2006? Is
14 that going to push it back?

15 JOHN MUDRE: It probably will result in the later
16 issuance of a license. If -- well, our original schedule
17 called for a license in two years from the filing of the
18 application. And it's probably safe to say that this is
19 going to be a little longer than two years based on us being
20 a little bit behind in the schedule now.

21 Another thing that we did that put us behind schedule
22 was we did schedule a couple of additional scoping meetings
23 to be held along the coast in June. So that in itself put
24 us about a month behind what our original schedule was. And
25 with all the additional study requests and the comments,

1 there's just a lot of information we need to consider.

2 RALEIGH WILSON: This is going to be a big project
3 on a big relicensing task. But you should know that even
4 though we are -- the schedule is getting pushed back now,
5 when we start bumping up against that two-year period that
6 John was referring to, the Commission will start to take
7 notice that this project has not been finished yet, and they
8 will start putting pressure on staff to get the analysis
9 done. Because we have folks in Congress who are looking at
10 us to get these things taken care of. So there will be
11 timeline pressures eventually.

12 Another point that I wanted to raise about your all's
13 opportunity to get involved in the process is that John
14 mentioned other agencies will be filing conditions and
15 recommendations with the Commission. And if I recall from
16 your intervention concerns about fish resources, NOAA, and I
17 think Fish and Wildlife are both fact finding in this
18 project. Those are agencies that should be talking to you
19 as well about your actions in this project. National Marina
20 Fishery Service.

21 PATRICK HIGGINS: They are also National
22 Association of Oceanographic and Atmospheric Administration.
23 It just changed their name to NOAA Fisheries.

24 JOHN MUDRE: I don't think it's been officially
25 changed by Congress or anybody, but they do now refer to

1 themselves as NOAA Fisheries instead of NIPS.

2 PATRICK HIGGINS: Now they comment, of course, on
3 the flow plans from BOR, which have a very, very
4 inextricably linked relationship with the FERC project. So
5 now they're signing off on that BO's with FERC -- biological
6 opinions -- and they're commenters on that process, but they
7 are also commenters on this process. So they have a nexus
8 to ESA with you guys?

9 JOHN MUDRE: Right. The licensing is a federal
10 action, so we need to comply with Section 7 of the
11 Endangered Species Act. So we will be going through
12 endangered species consultation with NOAA Fisheries and also
13 with the Fish and Wildlife Service for the listed sucker and
14 probably the bald eagle as well.

15 Let me mention one other thing that I forgot to mention
16 about the licensing process. That some of these agencies
17 that we just mentioned have the ability, they have what's
18 called mandatory conditioning authority. They can given us
19 certain recommendations that we don't have any -- we can't
20 modify them. If they tell us this has to go with the
21 license, we have to put it into the plans. Examples of that
22 are the State Water Resources Control Board in California.
23 The Commission cannot issue a license until the State of
24 California, in this case the State of Oregon as well, issue
25 what's called a Water Quality Certificate. And that Water

1 Quality Certificate, most of the time they have certain
2 conditions that the licensee has to meet. And so those, we
3 have no opportunity to change those; those have to go into
4 the license.

5 National Fishery Service and Department of Interior,
6 they can recommend fish passage facilities under Section 18
7 of the Federal Power Act. If they do that, we can't change
8 that either. We have to require that with the licensee.
9 There are recriminations like that that we will receive that
10 we have no discretion over and just have to put them in the
11 license.

12 There are some other recommendations from agencies that
13 they are called 10(j) Recommendations that we have to give
14 deference to, and we have to include in the license unless
15 we make a determination that they're inconsistent -- to do
16 so would be inconsistent with the Federal Power Act or some
17 other legislation. So there are recommendations that we
18 need to take very seriously, too, but they are not
19 themselves mandatory like some of the other ones.

20 ELI ASARIAN: Eli Asarian.

21 In terms of who actually makes the decision at FERC and
22 how many people are working on this project, I see you three
23 physically in this room. How many other people are doing
24 research? What's the number? Are they working on just this
25 project or other projects as well at the same time?

1 JOHN MUDRE: I think everyone -- no one works on
2 just one project. I'm the coordinator for this relicensing.
3 And I'm also -- my background is Fisheries and Water
4 Quality. In addition to -- we also have a team with people
5 that oversee the different resource areas, so we have a
6 Culture Resources person, a Terrestrial Resources person.
7 All the different engineers, economists types.

8 But also this is a very big, complex proceeding. We
9 have -- the Commission has a support contractor, the Lewis
10 Berger (phonetic) Group. And their job is to assist us in
11 preparing these environmental documents. So Fred here is
12 with Lewis Berger Group. He's a Fisheries guy as well. But
13 they have got -- there's probably 20 people on their team
14 covering different resource areas. Some areas have two or
15 three people working on them. So it's a big effort.

16 Again, were all working our task as staff, is to put
17 this Environmental Impact Statement together, which then, as
18 I said before, sort of guides the Commission, provides them
19 the information on which they can base a good licensing
20 decision.

21 ELI ASARIAN: This is Eli Asarian again.

22 The Commission is a panel of people appointed by the
23 president?

24 JOHN MUDRE: Confirmed by the senate. And it
25 changes as the commissioners change and presidents change

1 and things like that. So the Commission that's there now,
2 you know, in two years may be some different people. And
3 they tend to be a different Commission. So it's sort of
4 fluid.

5 ELI ASARIAN: Are they involved in the process
6 right now, or do they wait until you get the EX finished?

7 JOHN MUDRE: In most cases they don't personally
8 get involved in every case, but I know in this case, each
9 commissioner has assistants too. And they cover different
10 areas. But I know that some of our commissioners and their
11 assistants have been up to the Klamath Project and looked
12 around. So there are, you know -- this is on people's radar
13 screen.

14 RALEIGH WILSON: That's another interesting way to
15 consult with us, if you choose to. The commissioners
16 themselves usually are in D.C. because their schedules are
17 so busy and take meetings with different groups. When
18 there's a formal contested proceeding going on, they can't
19 talk specifically about that proceeding without doing things
20 like the court reporter. Which if all happen to be in D.C.
21 on other business, it's possible that we could schedule a
22 meeting with a commissioner or two. Can't have more than
23 three in the room, otherwise it has to be a publicly noticed
24 meeting. But you can schedule meetings with them and help
25 them understand the Quartz Valley Indian community, what

1 your interests are, generally speaking, and help them get to
2 know you all more personally rather than just through your
3 filings. So that's another possibility.

4 FRED WINCHELL: Fred Winchell.

5 One thing I might add on the schedule, is the schedule
6 for the whole process will become a little more clear when
7 the additional information request comes out. The length of
8 time that's required for those studies will affect the REA
9 notice going out. So you probably get a sense for the
10 schedule when the EIS comments out. Often includes the last
11 schedule --

12 JOHN MUDRE: John Mudre.

13 We will be including a revised schedule with the
14 additional when that comes out. There will be a revised
15 schedule attached to that.

16 PATRICK HIGGINS: Pat Higgins.

17 When do you expect Scoping II?

18 JOHN MUDRE: Soon. I can't say exactly when. All
19 three of these things should be coming out relatively soon.

20 PATRICK HIGGINS: First quarter of 2005?

21 JOHN MUDRE: Probably. I would like to see it
22 sooner. But, you know, that's probably it. Definitely.
23 I'm thinking, you know, hopefully not later than January.

24 PATRICK HIGGINS: Okay, so first quarter.

25 JOHN MUDRE: Early first quarter. I was hoping it

1 would be at this point, but with the holidays and
2 everything, might be a little tricky.

3 REBEKAH SLUSS: John -- this is Rebekah Sluss.

4 I just had a question. Since we were talking about the
5 processes earlier, I thought I would just ask it now.

6 How is FLA going to worked with the Klamath TMVL
7 because those processes are going on at the same time right
8 now. The Water Quality Control Board and the State of
9 Oregon are working on the deals in the Klamath. That's kind
10 of going on on one path, then the FERC relicensing is going
11 on on another. How is the license going to meet those
12 requirements the requirements if they come out at the same
13 time?

14 JOHN MUDRE: That's always a problem when you've
15 got other things going on you don't have any control over.
16 Our practice has been that we don't wait around for these
17 other things to happen. If things come in and get done
18 before we make a decision, we have the opportunity to
19 consider them. But some things take longer than you expect
20 and, you know, if you start waiting for something, you may
21 wait a long time.

22 If you look at the adjudication in Oregon, water
23 rights, that's been going on since 1988. That may have some
24 bearing on this, at least in the amount of water that's
25 available in the system.

1 TMVL's, it's another thing. We have no control over
2 it. It's part of, if they're out there, we have got to
3 consider them. At this point they're not out there.

4 REBEKAH SLUSS: I'm concerned about that. Because
5 if you issue a license for 30 to 50 years and the TMVL comes
6 out after that, what's happening in the licenses not meeting
7 the TMVL requirements, how are you going -- are you going
8 reopen the license?

9 JOHN MUDRE: That's a possibility. Licenses can
10 be changed once they're issued. They can be amended. If
11 the licensee requests that the license be amended, we can
12 start an amendment proceeding and decide if the requested
13 amendment is in the public interest, and if it is, we grant
14 it.

15 There are reopener clauses in most of our licenses that
16 allow agencies or tribes or interested parties to request to
17 reopen the license to consider something.

18 If we know something may be coming out soon, we can
19 even build in the license article that says, well, if this
20 comes out, we may have to change the license to accommodate
21 this new listing or this biological opinion or something
22 like that.

23 The Water Quality Certificates from the states may
24 contain to permutations that say we have to do this or the
25 licensee has to do this if something changes, you know, the

1 Clean Water Act or TMVL's or whatever. So there's ways of
2 accommodating that.

3 It would be nice to have everything in advance and to
4 consider it, but again, some things we just can't be in a
5 position of waiting around for things that are supposed to
6 happen.

7 REBEKAH SLUSS: I would like to see something in
8 the license because the TMVL is coming down in 2006 or
9 shortly thereafter, and something that is specifically
10 stated that once that is established that will be built into
11 the license. Because I think it's really important,
12 otherwise what good is a TMVL?

13 JOHN MUDRE: Yeah. We will consider -- I think
14 consider what is in your EIS, what is going on in the
15 process, where we are at with it, what it might mean in
16 terms of, you know, what we need to do. So we don't ignore
17 that process and that it's happening, we acknowledge it.
18 But we don't wait around for it.

19 REBEKAH SLUSS: What happens if a species becomes
20 listed after the license is issued? Is that the same thing?
21 Would that trigger a reopener clause?

22 JOHN MUDRE: It could. I think there's been some
23 question as to what happens if there is an existing, got a
24 project license that's existing, and something is listed,
25 whether or not there's a federal action that would trigger

1 Section 7 consultation or not. I'm probably not the best
2 one to address how that works.

3 RALEIGH WILSON: Even NOAA Fisheries is not sure
4 itself when new listings come, whether, if it's mid-license,
5 whether that triggers a consultation.

6 JOHN MUDRE: Usually the requirement or
7 consultation is triggered by a federal action. After the
8 license is issued, some people say that our on-going
9 oversight of these projects is a federal action. Whereas,
10 other people, you know, say the licensing itself is the
11 action, and once it's over, there's not an action.

12 REBEKAH SLUSS: There are some species in the
13 Klamath that are being looked at right now. I think that's
14 another important consideration in this license.

15 JOHN MUDRE: Certainly the Commission, Commission
16 staff, and even PacifiCorp, no one wants to hurt or delay,
17 you know, to do bad things to endangered species. Everyone
18 I think is looking to do what they can to avoid, to restore
19 things.

20 REBEKAH SLUSS: So we will be looking for that.

21 RALEIGH WILSON: Just for you to know, that issue
22 is going to be a much bigger issue than just the Klamath
23 relicensing. The whole sort of general question of can you
24 initiate ESA consultants mid-license is a big question for
25 NOAA Fisheries, Department of Interior, all of those big

1 federal agencies legally could go either way on that issue.
2 So you should communicate with them, work with them through
3 the process.

4 I wanted to get back to your question on the TMVL. Is
5 that the State of Oregon starting the TMVL process?

6 REBEKAH SLUSS: State of Oregon, California.

7 RALEIGH WILSON: Is that part of your 401
8 certification process or is it a component or separate?

9 JOHN MUDRE: I think it's 303, Section 303(d),
10 maybe, of the Clean Water Act.

11 PATRICK HIGGINS: Just for your information, the
12 Klamath is listed for dissolved oxygen and nutrients. When
13 we present here in a moment, you'll see that those sort of
14 things that appear to be fairly substantially related to
15 project operation. So it's not like this \$500,000 TMVL
16 study is about some minutia that isn't exactly germane.
17 Since PacifiCorp has conducted the studies previously, they
18 have certain interests in this project, there may be
19 different findings and outcomes from government scientists
20 or their contractors that try to untangle the question of
21 what is the role of dams in nutrient enrichment and
22 dissolved oxygen problems in the Klamath.

23 This is like supplemental. You guys don't have another
24 half a million to drop on this. They have contractors which
25 are probably about two stones' throw away from D.C. working

1 on that. I know also they are not likely to share results
2 before it's prime time. So I don't know how to deal with
3 this.

4 This is Pat Higgins. Sorry about that, Mr. Reporter.

5 It isn't like -- there's no logic in these two
6 processes going forward, like two trains on parallel tracks
7 with no connection.

8 RALEIGH WILSON: It seems to me that because it's
9 not a 401 issue, that what's occurring within the project
10 boundary regarding nutrient load in the reservoirs is an
11 issue that we will be doing in our NEPA review, in our water
12 stuff and your NEPA documents. So your TMVL issues will be
13 a FERC issue.

14 Now, what the State of Oregon, State of California come
15 up with in their TMVL study, it's kind of like a third-party
16 thing to us. We might be interested in it. We might want
17 to include it in our consideration eventually. But in order
18 to get these projects licensed, we will have to do a TMVL
19 thing in our licensing to some extent. It obviously won't
20 be as detailed as these state agencies that are interested
21 in this issue, but I think we would be interested in looking
22 at nutrients in our NEPA documents.

23 JOHN MUDRE: TMVL is a specific regulatory
24 requirement. It's a quantitative statement of how much
25 pollution can be put into a river without violating the

1 Clean Water Act.

2 PATRICK HIGGINS: So they will also be kind of
3 looking at the question of what the inherent load, what is
4 the additional load. Those are pretty complex questions.

5 JOHN MUDRE: So it's not just nutrients but the
6 nutrients and regulatory requirements and things like that
7 of other agencies.

8 PATRICK HIGGINS: What's HAZMAT of nature, what's
9 human induced.

10 RALEIGH WILSON: I guess what I'm trying to parse
11 out is kind of the legal aspect of this, which is the
12 project reservoirs we have jurisdiction over, and so a TMVL
13 study that's not part of a 401 certification is in some ways
14 unrelated, in our minds, to the project.

15 PATRICK HIGGINS: There isn't a direction nexus is
16 what you're saying. May not be logical this terms of
17 subject matter and brain power, but they are parallel and
18 separate, and this is like what goes on in government.

19 RALEIGH WILSON: Yeah, and I just phrase that
20 issue to help all of us understand what we are going to do
21 in the licensing versus what might be going on in other
22 areas.

23 PATRICK HIGGINS: The 401, seems like the State of
24 Oregon and State of California are both tracking these and
25 are going to be pressing similar questions to those that

1 need to be resolved into TMVL.

2 AARON PETERS: In observing, there are many
3 components to this means of licensing, so therefore you
4 folks are on a timeframe so whatever information we get to
5 you, the license will be processed anyway.

6 JOHN MUDRE: Could you rephrase that?

7 AARON PETERS: In observing what's being stated up
8 to this point, there are a lot of components to licensing.
9 So you're on a timeframe, knowing Washington, you're on a
10 timeframe, so whatever information or component that is not
11 received, the license will be processed anyway.

12 JOHN MUDRE: No. It won't be processed until we
13 have enough information to make, you know, a reasoned
14 decision.

15 RALEIGH WILSON: You know, that said, as we have
16 been talking here for the last 45 minutes, I think there
17 have been a couple different processes raised: State Water
18 Quality, ESA, our licensing process, a bunch of different
19 agencies who have various responsibilities to use the tribe,
20 or three or four different ways that the tribe can get
21 involved in just our licensing process. So you're right,
22 it's a lot of stuff to cover.

23 And also each of those opportunities for comments and
24 input by other tribes are going to occur in some sort of
25 deadline. We will give you as much heads-up notice as we

1 can, but it will consume a lot of time and energy to keep on
2 top of those things.

3 JOHN MUDRE: We cannot issue a license until the
4 states issue their Water Quality Certificates. There are a
5 lot of instances where we are ready to issue the license,
6 but the state is not ready to issue their certificate. So
7 that's another, it's something that we have to deal with.

8 They have to be satisfied that they understand enough
9 of what's going on that they can put out a Water Quality
10 Certificate that meets their requirements.

11 REBEKAH SLUSS: Is there anything else, counsel
12 members?

13 HAROLD BENNETT: I guess we could look at the
14 presentation.

15 PATRICK HIGGINS: Take a couple minutes to put it
16 up.

17 JOHN MUDRE: Do you want to take a five-minute
18 break?

19 (Richard Super enters the room.)

20 REBEKAH SLUSS: Richard Super is on the counsel,
21 and he's our Tribal Director.

22 ELI ASARIAN: We will get the presentation up and
23 running.

24 Eli Asarian with Kier Associates.

25 We have been contracted to help out the Quartz Valley

1 Indian community and also for other federally recognized
2 tribes in the Klamath basin. Our specific task is to look
3 at water quality issues and whether these issues that affect
4 water quality are based on analyses --

5 JOHN MUDRE: We just met him today. He's probably
6 not done any of those meetings before.

7 ELI ASARIAN: Okay, so Eli Asarian, Kier
8 Associates. We have been contracted to help the Quartz
9 Valley Indian community and also four other federally
10 recognized tribes in the Klamath basin. And one of things
11 that we are working on is this Klamath Hydroelectric
12 relicensing process.

13 We have been studying the relicensing and the issues
14 involved there. And we have prepared additional study
15 requests in coordination with the tribe, and the tribal
16 counsel signed on those, and is interested in our additional
17 study request to FERC and to PacifiCorp. So a lot of the
18 things that I'm going to talk about in the presentation
19 today we have submitted to FERC in written form, both in our
20 comments and additional study requests to the final license
21 application, and then also in comments to the Scoping
22 Document number 1, back in May or June.

23 So if you miss some of the details, you can always go
24 back to the written documents for more detailed information.

25 So the title of this that I'm talking about today is

1 going to be the Klamath Hydroelectric Project Relicensing
2 and why we should consider TMVL commissioning as an
3 alternative. In Scoping Document 1, it wasn't necessarily
4 stated that decommissioning will be considered as an
5 alternative. So we are hoping that in the alternatives that
6 are laid out in the Environmental Impact situation that
7 decommissioning is one of those.

8 So it's sort be maybe the lens with which we are
9 looking at the water quality issues is that how does the
10 existence and the operation of the project affect the water
11 quality in the Klamath River, both in the project area and
12 downstream of the project area.

13 It's been real interesting working on the issues, and
14 thanks for the opportunity to talk today.

15 PATRICK HIGGINS: Of course as we address water
16 quality, it's synonymous under the Clean Water Act with
17 fish. So when Eli said water quality, you can think of coho
18 salmon. It's identical. Having those or strongly
19 overlapping tribal interests. Because of the tribes, the
20 fish are everything.

21 ELI ASARIAN: So a brief outline so I can show you
22 what I'm going to talk about today.

23 First, just to provide some context, what are the
24 fisheries resources of the Klamath basin, and how are they
25 affected by the project. Also how does the physical

1 geographical location of the project, how is that relevant
2 to water quality and fisheries, and how the project might
3 impact those.

4 The project is not just anywhere in the world, it
5 happens to be in a specific place, that's in a specific
6 context. There's things happening upstream and downstream,
7 and we need to consider all those things.

8 I'm also going to talk about fish passage. That's
9 going to be a relatively minor aspect of my presentation.
10 But with large dams, there obviously is impact on movement
11 of salmon and other fish species.

12 Like I mentioned earlier, we have been working mostly
13 on water quality, so this fish passage issue is sort of a
14 minor component of what we have been working on. There's
15 other tribes in the basin that are -- have submitted really
16 detailed comments about the impact of the project on fish
17 passage.

18 I'm going to spend a lot of time talking about the
19 water quality conditions in the project and water quality
20 impacts of the system and since the operation of the
21 project.

22 In conclusion, sort of recap why decommissioning should
23 be substituted as an alternative. Also talk about why this
24 is a really important time for the Klamath River. Sort of a
25 little bit of history and little bit of future projections.

1 So first the fisheries resources of the Klamath River.

2 And the Klamath is world famous for its salmon and
3 steelhead, and I think historically had one of the largest
4 salmon runs on the west coast. The dominant species
5 historically was spring run Chinook, and those numbered at
6 one time approximately 500,000. And sometimes now there's
7 less than a thousand wild spring run Chinook that run in the
8 Klamath basin above the Trinity River. So the fish are
9 still there, but they are definitely reduced in number.

10 Fall Chinook is another salmon species in the Klamath.
11 And that is not declined as precipitously as the spring-run
12 Chinook, but it has declined definitely. They are now the
13 most common salmon species in the basin, outnumbering
14 Chinook. They seem to be especially vulnerable in drought
15 periods.

16 Coho salmon are listed under the Endangered Species
17 Act. They are endangered, so they are definitely in
18 trouble; have declined by a lot. Also the steelhead
19 population is also listed under the Endangered Species Act.

20 There's other fisheries resources in the Klamath basin
21 that are really important to the tribes. The tribes have
22 been living with and utilizing for thousands of lives and
23 those include green sturgeon and also Pacific lamprey.

24 And one important note on the lamprey is that when Iron
25 Gate dam was put in and Iron Gate reservoir, as part of the

1 condition of that project going in, Iron Gate hatchery was
2 created to mitigate for the lost spawning and rearing
3 habitat for Chinook salmon and steelhead above that dam.
4 But there was, it's not entirely clear that the hatchery has
5 adequately mitigated for those impacts. At least it was
6 something. Whereas with the Pacific lamprey there was no
7 mitigation from the construction of Iron Gate reservoir.

8 Other important fish to the tribes, not specifically to
9 the Quartz Valley but the Klamath tribes of Oregon up in the
10 upper basin harvested sucker and also there was large runs
11 of spring-run Chinook salmon.

12 The Klamath River is very important as a nursery area
13 for juvenile fish. Different species, depending on their
14 life history, and they spend varying amounts of time in the
15 river. There are the river at different times. But every
16 species that lives in the river, it's there for at least
17 some time during the year. It's passing through the river
18 or spent many years in the river. And the conditions in the
19 main stream Klamath Rivers due to low flows and poor water
20 quality at this point in history is a far-from-ideal nursery
21 habitat for these fish.

22 The tribes have been relying on the fish for at least
23 ten thousand years, since time immemorial, and they still do
24 today, and that's an important thing to consider.

25 Sport fishing in the Klamath River is a very important

1 part of the economy in the Klamath basin. I'm going to talk
2 about some things today where the project has impacts to the
3 value of that sport fishing industry and to the economy and
4 the economic well-being of people.

5 So the setting of the Klamath Hydroelectric Project and
6 it's relationship to water quality. So the Klamath River
7 and the hydroelectric project exist at, you know, a specific
8 point in the world, and it has a context and that definitely
9 affects the things that are happening in the project area.
10 The Klamath River begins up in the Cascades in southern
11 Oregon. There are several rivers, like the Wood and the
12 Sprague and the Williamson that collect into Upper Klamath
13 Lake, which is a large shallow lake in the upper basin.

14 Then out of that flows -- there's a dam out of the
15 outlet of the dam, Link River dam. Just a short section of
16 river, Link River, just 7 miles. And there is Lake Ewauna,
17 which is a natural lake, which is, due to Keno reservoir,
18 it's backed up. It a strip of reservoir all the way back
19 and connects to 81. It's a long, thin reservoir almost like
20 a flooded reach of the river.

21 Then there is what's called the Keno reach, the Klamath
22 River is the river again. Then there is JC Boyle reservoir,
23 dam and reservoir. Then the river flows through the JC
24 Boyle bypassage where most of the water is taken out of the
25 river and put in a power generators and back into the river.

1 This is call the peaking reach. Out of JC Boyle they ramp
2 up the flows, it's like a flood and drought on a daily
3 cycle, because they want electricity in a certain time of
4 day.

5 Then water collects in Copco reservoir, which is the
6 one of the larger reservoirs in the system. There is some
7 power generation that happens there. Another there's
8 another little dam right below that, Copco 2. There's a
9 short maybe one-mile reach of year, then it goes into Iron
10 Gate reservoir, and then the Klamath River flows out down to
11 the ocean.

12 PATRICK HIGGINS: 180 miles.

13 RALEIGH WILSON: Can you go back to that. Can you
14 show where Quartz Valley is?

15 ELI ASARIAN: It would be downstream. Shasta
16 River would be like here.

17 JOHN MUDRE: You can show them where Yreka is in
18 the lower left.

19 ELI ASARIAN: Quartz Valley would be down here.
20 So here's Upper Klamath Lake. And this is a large shallow
21 lake. I put this picture up here so that you can sort of
22 see an illustration of the land use changes that have
23 happened around the edge of the lake. This is sort of --
24 what is existing wetlands. A lot of the perimeter of the
25 lake was once wetlands. In the World War II area, a lot of

1 those wetlands were diked and drained. You can see this
2 here. There is levies. And there is draining and farms
3 now. There's a land use change that is happening upstream
4 of the project. That's contributed to the nutrient
5 enrichment of the Klamath River.

6 And conditions in the lake, water quality conditions in
7 the lake are, seasonally in the summer time, are quite poor.
8 And there's on some years there's massive fish kills of
9 shortnose and suckers that are endangered species.

10 Talk about some reasons for the water quality
11 deterioration in the lake. As I mentioned, the lake was
12 once ringed by thousands of acres of marshes. A lot of
13 those have been diked and drained. Historically those
14 marshes would have trapped nutrients like phosphorus. When
15 that land was diked and drained and then plowed and
16 irrigated, all of that phosphorus that was stored up in
17 these marshes is released into the lake.

18 The phosphorus gets into the lake, and has stimulated
19 blooms of an algae, and it's a blue-green algae. The
20 scientific name is *Aphanizomenon flos-aquae*. Say that three
21 times fast. It was not found -- they have done some
22 historical research and determined that this algae species
23 was not present in the early 20th century in Upper Klamath
24 Lake but is now, almost the entire biomass of algae in the
25 lake is dominated by this one species. Extremely successful

1 in that one location.

2 This algae has some real interesting properties that
3 are highly relevant to water quality. One of them is that
4 it is able to fix nitrogen. That is it is able to take
5 nitrogen out of the air and assimilate it into its own cells
6 and to use that nutrient to help fuel its growth. That's
7 one of the main reasons why it is the most abundant species
8 in the lake because it has this competitive advantage
9 because it can manufacture at least some of its own
10 nutrients.

11 In Upper Klamath Lake that's had a huge impact on the
12 lake. They have done research where they look at the amount
13 of nitrogen that is flowing into the lake and look at the
14 amount that's flowing out of lake, and if you look and make
15 that comparison there's three-and-a-half times as of
16 nitrogen coming out of the lake as there is coming into the
17 lake. A big part of is that is due to these algae blooms
18 fixing nitrogen and adding that to Upper Klamath Lake.

19 This species of algae -- I'll talk more about it later,
20 but it occurs basically at every point in the Klamath River
21 downstream from there where water is impounded and there is
22 an additional reservoir.

23 And so the water quality conditions and the nutrient
24 levels in Upper Klamath Lake have changed over the 20th
25 century, and this has impacted how the project reservoirs

1 operate. When the project was put in, the water was
2 relatively -- I don't know if I can say clean. Probably
3 1918 probably was really clean in the Klamath River. Since
4 then it's sort of been this slide down in poor water quality
5 conditions. We can expect different things to happen in the
6 reservoir now under current conditions than happened
7 originally.

8 Another nutrient input to the Klamath River is the
9 Klamath Straights drain. This takes water from the Klamath
10 Irrigation Project and brings that -- it's basically runoff
11 or excess irrigation water from the fields, goes into canals
12 and then it's flushed into the Klamath River. That brings a
13 lot of nutrients. And farming methods have sort of
14 increased in intensity over the 20th century, at least
15 higher now than they were at the beginning of the project.
16 The pollution levels have also increased. And we think that
17 this is something that needs to be considered by FERC, the
18 fact that the water quality conditions upstream of the
19 project are radically different now than they were when the
20 project was installed. And it's not the same place as was
21 in 1918 when Copco reservoir was put in.

22 I'm going to show pictures of the dams here sort of in
23 a sequential order. Uppermost is Link dam. This is at the
24 upper outlet to Upper Klamath Lake. It does generate some
25 power. PacifiCorp is proposing to cease hydroelectric

1 generation at Link dam and decommission it to eastside and
2 westside powerhouses, which are the electric generation
3 facilities at Link dam.

4 But they're proposing to keep the Link dam in so that
5 Upper Klamath Lake reservoir levels can be managed.

6 PATRICK HIGGINS: But they no longer will take
7 responsibility for that facility. We are trying to
8 completely divest.

9 ELI ASARIAN: Keno dam is the next one. This is
10 one that backs up that long skinny reservoir. And it was
11 originally going to generate power, but it was never -- that
12 never materialized. I think there wasn't enough potential
13 to generate electricity. So it causes stagnation of the
14 Klamath River. I think it's maybe 12, 12 miles long. So it
15 backs up -- what was formerly river is now reservoir. The
16 main function of this dam now and the reservoir is to
17 maintain levels for irrigation canals.

18 RALEIGH WILSON: Is that a PacifiCorp dam or --

19 ELI ASARIAN: It is a PacifiCorp dam. They are
20 proposing to remove it from the new license that they are
21 applying for.

22 PATRICK HIGGINS: And to let the Bureau take it
23 over, along with Link River dam.

24 ELI ASARIAN: That decision not to include Keno
25 dam as part of the new license proposal has, I guess I would

1 say has caused some controversy among main parties.

2 The next dam is the JC Boyle dam.

3 RALEIGH WILSON: I'm sorry to interrupt again.
4 Has caused controversy among parties?

5 ELI ASARIAN: For instance the State of Oregon has
6 basically said they think that's a really bad idea. They
7 would like to see it -- the State of Oregon considers that
8 dam to cause significant problems to water quality in the
9 Klamath River. And so they would like to see that -- they
10 would like to see the dam included as part of the new
11 license application so it can be evaluated and study its
12 effect in detail, and decide whether or not they should take
13 it out. If it's not part of the license application, then
14 it's unclear what the process is for when and how the
15 impacts of this dam will be evaluated. Or even if they will
16 be.

17 RALEIGH WILSON: Just so, throw out a
18 hypothetical. Interestingly PacifiCorp is talking about
19 shrinking the project, and at least one state agency would
20 like it to stay the size that it is so that they can
21 maintain regulatory control?

22 PATRICK HIGGINS: That's pretty much true.

23 ELI ASARIAN: Yeah, I would say.

24 JC Boyle dam is the next one after Keno. For a stretch
25 of about eight miles all the, basically the entire flee of

1 the Klamath River minus about 100 cubic feet per second is
2 diverted into pen stocks and taken downstream to generate
3 electricity. So there's sort of a bypass reach below there.
4 There's significant water quality problems in this
5 reservoir.

6 RALEIGH WILSON: Only a 100 CFS drain out of
7 concrete structure?

8 ELI ASARIAN: Yes, the rest goes into some sort of
9 pipe that goes down the side of the canyon wall.

10 PATRICK HIGGINS: They can operate one at 1500 or
11 two at 3,000.

12 RALEIGH WILSON: How many miles does it go before
13 it gets back into the river?

14 PATRICK HIGGINS: Six to eight. This is probably
15 prior to a hundred CFS requirement. That's more like ten to
16 twenty.

17 RALEIGH WILSON: That's a recent thing? 100 CPS?

18 PATRICK HIGGINS: Yeah. PacifiCorp has said they
19 would increase base flows as part of the operation of JC
20 Boyle under their new license agreement.

21 ELI ASARIAN: I think they are proposing to
22 increase the minimum release from 100 to 200 cubic feet per
23 second.

24 Next dam is Copco. It was constructed in 1918. There
25 was never a fish ladder on this dam and this is what cut off

1 salmon runs on the upper basin. The Klamath tribes of
2 Oregon didn't know about the construction of this dam until
3 the salmon just didn't come back. They asked and figured
4 out what had happened.

5 Copco reservoir has some major water quality problems
6 as well as does basically every one on the Klamath River.

7 There is a small dam below Copco 1 and that's Copco 2.
8 Basically again the entire flow, even more than at JC Boyle,
9 the entire flow I think there is maybe five cubic feet per
10 second, that's released below Copco 2. The entire flow is
11 diverted into pen stocks for electrical generation. There's
12 about a one- or two-mile long bypass reach, essentially,
13 where there's only a small amount of water, so there's a
14 reduced value for fisheries. Also reduced ability of the
15 river to assimilate nutrients and improve water quality as
16 it flows.

17 We will be talking more later in the presentation about
18 the ways in which the river is able to clean itself as it
19 flows downstream.

20 RALEIGH WILSON: Could you go back to the slide?
21 Where's the dam?

22 PATRICK HIGGINS: Just out of the -- that's what
23 you're seeing right to your -- the pipe is up on the side of
24 the hill. On this Copco slide you can see the pen stocks
25 coming out.

1 ELI ASARIAN: I think the flow on the river could
2 range between 500 and 2000 CFS. It's maybe one to five
3 percent of the flow is still in the river at that point.

4 REBEKAH SLUSS: So there's a fish bypass around
5 Copco 2, or river bypass?

6 PATRICK HIGGINS: No, there's no fish passage on
7 Copco 1 or Copco 2 or the Iron Gate.

8 ELI ASARIAN: So the lowest three dams in the
9 system.

10 PATRICK HIGGINS: They are in California. Oregon
11 requires fish passage.

12 ELI ASARIAN: Iron Gate dam is the last dam.
13 Completed in 1966, and it blocked fish passage upstream.
14 That includes spring Chinook. It's reservoir is one of the
15 larger reservoirs in the system, holds the most water and
16 has a large surface area. It is source a nutrient pollution
17 due to the fact the algae blooms are adding organic matter
18 to the water as they grow. Not only are the pulling
19 nitrogen out of the water through the nitrogen fixation, but
20 they also taking carbon dioxide out of the air and adding
21 that to the water.

22 REBEKAH SLUSS: I'm sorry, I want to tell you guys
23 there's coffee being brewed right now.

24 ELI ASARIAN: So I talked a little bit in the past
25 few slides about fish passage at Copco and Iron Gate.

1 Here's a photograph of some fishermen at Link River
2 which is pretty close to the outlet of Upper Klamath Lake in
3 1891 displaying their catch, probably a Chinook salmon.
4 Prior to when Copco dam was built, the salmon went all the
5 way up into Upper Klamath Lake, and then all the way up into
6 the rivers that are tributary to Upper Klamath Lake.

7 RALEIGH WILSON: That Upper Klamath Lake, was
8 there a coho population up there?

9 ELI ASARIAN: No.

10 PATRICK HIGGINS: They can't establish that. We
11 know that they ran up in the canyon up above Copco, but I
12 don't think it's been ascertained that they actually went
13 past Klamath Falls. This is one of the few historic photos
14 and just not quite good enough to indicate the species.
15 Size of these fish would suggest Chinook, but the snout
16 could also be coho.

17 RALEIGH WILSON: I'm sorry, I was thinking of
18 sockeye. There is some sockeye?

19 PATRICK HIGGINS: Sockeye, there is some
20 literature that indicates that there may have been paleo
21 populations of sockeye, but not in terms of the historic
22 record.

23 ELI ASARIAN: So there's no fish ladders at Iron
24 Gate, Copco 1, or Copco 2.

25 This is a picture of the fish ladder at JC Boyle dam.

1 And there is a fish ladder here, although it's been
2 documented that there are significant problems for fish
3 passage at this site. The only fish that have access to
4 this right now are resident trout. And there's been some
5 studies by the Oregon Department of Fish and Wildlife
6 showing there are problems with fish passage here.

7 JOHN MUDRE: It looks like Keno.

8 ELI ASARIAN: Is it? Maybe it is. Thank you for
9 that.

10 RALEIGH WILSON: When they constructed these dams
11 in Oregon, even though at that time there was no (?) fish,
12 Oregon said we want fish passage for resident fish?

13 ELI ASARIAN: Yeah.

14 PATRICK HIGGINS: Unlike California, Nevada
15 document very closely the trends in population both of fish
16 jumping off the dams and of resident populations in the
17 reaches below the dams. They have shown very dramatic drops
18 in ladder count in J.C. Boyle and Keno over the time. There
19 are some significant issues being raised by fish passage at
20 those dams that you guys hear lots about.

21 ELI ASARIAN: One reason that we put this slide in
22 here is just to be conscious that adding a fish ladder to a
23 reservoir does not necessarily mean there's no more fish
24 passage problem at the reservoir.

25 PATRICK HIGGINS: The water quality are apparent

1 by the bumps and stones in the ladder.

2 ELI ASARIAN: Here's a map with areas shown in
3 dark blue, areas that were historically salmon spawning
4 habitat. Everything above here is blocked by dams now. The
5 smaller tributaries in the -- below Upper Klamath Lake was
6 habitat for coho salmon and steelhead. And then the upper
7 basin, this was mostly spring Chinook habitat.

8 RALEIGH WILSON: What's the status of the land
9 around those now? Is it national forest land or is it
10 farming?

11 ELI ASARIAN: Yeah, I think it's national forest.
12 I think there's small private holdings and some limited
13 agriculture and timber harvest.

14 PATRICK HIGGINS: Yeah, Spenser has got
15 significant private industrial in-holdings, but mostly
16 Klamath National Forest. And Jenny and Fall are both
17 lightly managed and mostly in a non-timber-harvest area.

18 ELI ASARIAN: There's been some people that have
19 looked at what are the costs of this fish passage. NOAA
20 Fisheries or National Marine Fishery Service have estimated
21 that adding fish ladders to Iron Gate and Copco and then
22 improving fishing passage at the other dams, those ladders
23 that are not performing as well as ideal, that that would
24 cost approximately \$130 million. PacifiCorp has basically
25 made a decision that it's not -- that the amount of revenue

1 that's generated from the project is not sufficient for them
2 to want to make that investment in the fish passage.

3 As far as looking at the option of that dam removal,
4 there's been an estimate that it would cost about \$40
5 million to remove the physical structures, the concrete and
6 the rock, at Iron Gate, Copco 1, Copco 2, and JC Boyle.
7 This does not include doing anything about the sediment that
8 is backed up behind the dam. I think that was something in
9 the order of another \$100 million.

10 The NOAA Fisheries precedent for endangered salmon is
11 that if a project cannot generate sufficient costs to pay
12 for full mitigation, then the project should be removed.

13 So I'd like to talk now about how -- what we see as
14 being the water quality impact of the project and also sort
15 of point out where we think additional studies would clarify
16 or determine the impacts of the project on water quality.

17 So I'm going to talk first about the role of the
18 reservoirs and how they affect water quality.

19 In PacifiCorp's. final license application, they sort
20 of put forth this hypothesis that the reservoirs have a
21 benefit to water quality because they slow the river down
22 and allow particles that are traveling down the river to
23 settle out, and that that has a beneficial impact on water
24 quality. But we don't feel that they provided sufficient
25 data analysis and research to really justify this

1 conclusion. They presented a few things that showed that.
2 But it was not by no means exhaustive, complete, or
3 sufficient to really determine that.

4 In fact there's some contrary evidence to that claim.
5 There was a recent study, I think it was commissioned by
6 PacifiCorp, some contractors of theirs performed the work,
7 that showed that bottoms of the reservoirs are hard, mostly
8 sand and gravel and mineral silts and clays. But they are
9 not soft and mushy, which is what you would expect if there
10 is nutrient settling out that would mostly be in the form of
11 organic matter. They are doing it with acoustic sounding
12 and they said the bottoms of the reservoirs were hard, which
13 is an indication that there is not organic matter settling
14 out, which is contrary evidence to what PacifiCorp is sort
15 of stating as their hypothesis.

16 Another matter that needs to be considered with the
17 reservoirs is that during the summer time the reservoirs
18 will stratify, and there will be a layer of warm water on
19 top and a layer of cool water that sits down at the bottom.
20 There is really poor water quality in that bottom layer, and
21 in the top layer, but the bottom is even worse.

22 During the fall the reservoir will turn over, and it
23 will mix, and then that unified body of water now is metered
24 out downstream.

25 So it may be that -- we haven't looked at this

1 sufficiently, but there could be some nutrients that are
2 settling during the year, during maybe the summer, but then
3 in the fall they are resuspended and mixed in and then
4 flushed down the stream. So we also need to look at the
5 temporal aspect of this. Are they trapping nutrients during
6 some parts of the year and exporting increasingly during
7 other parts of the year? Those are the questions we need to
8 look at.

9 I could summarize the question that they attempted to
10 answer in the final license application. They asked the
11 question: Is the quality of the water that's coming out of
12 the project better than the water quality that is coming
13 into the project? And the answer is yes. The water quality
14 coming out of Upper Klamath Lake is terrible. It almost
15 couldn't be worse, so it doesn't take a whole lot for water
16 to get better. So they have asserted that that means that
17 the project has a beneficial impact on water quality because
18 the output is better than the input. So, therefore, they
19 say the project must have a beneficial impact on water
20 quality.

21 An alternative hypothesis, and one that seems to us to
22 be the case, is that without the dams, that the water
23 quality would improve sooner, and by the time the water got
24 to Iron Gate, the outlet of Iron Gate, which wouldn't be
25 Iron Gate anymore, it would be -- it would be just that

1 point in space -- the water quality would be better than
2 what it is now.

3 And two key processes that we see making that change is
4 that the algae blooms in the reservoir, while there may some
5 nutrients that settle out in the reservoirs, the reservoirs
6 are also -- the algae blooms are fixing nitrogen from the
7 air and adding that to the water, and they are fixing carbon
8 and putting that into the water, and that is increasing the
9 load of organic matter that is flushing downstream.

10 A second thing is in a free flowing river reach there
11 were processes which occur in the river which allow the
12 river to remove nutrients from the water column, and they
13 can actually cleanse themselves as the river flows
14 downstream. I will talk in some detail about what those
15 processes are later.

16 So what we see as being a more appropriate question to
17 ask when we are trying to determine what are the true
18 impacts of the project on water quality is how does the
19 present day water quality conditions, how does that water
20 quality compare to what the water quality would be without
21 the project or with different configurations of the
22 projects; maybe some dams in or no longer doing peaking
23 operations, looking at various combinations, and then
24 figuring out will scenario has the best water quality. And
25 that that's a better way to assess the impact of the

1 project. You can't just say that it's better out than
2 coming in, therefore it's good. We need to ask this
3 question instead.

4 PATRICK HIGGINS: There's a bunch of springs and
5 water coming in, so the solution to pollution is dilution.
6 Just because there's clean water coming in, you can say it's
7 better, but it isn't the project.

8 ELI ASARIAN: So what we have in the Klamath River
9 in the project area is a river changed to reservoirs. The
10 Klamath River from Link dam, or the outlet of Upper Klamath
11 Lake, to Iron Gate was once 62 miles of free flowing river
12 and two miles of Lake Ewauna up at the top. In its current
13 configuration we have 37 miles of reservoirs, five miles of
14 bypass reach where most of the water is not in the channel,
15 it's up on concrete pipes up on the hillside, and then the
16 16-mile peaking reach where the flow in the river is
17 fluctuating up and down tenfold on a daily basis during the
18 most of the year. Then we have six miles of what you can
19 consider free flowing river that's the full flow of the
20 river, and this is below Keno dam, between Keno and JC Boyle
21 reservoir.

22 What does this mean for water quality? What it means
23 is that there's been a major alteration in the nutrient
24 cycling processes happening in the system. I'm going to
25 talk more about those as we move along here.

1 So in the reservoirs what we have is massive algae
2 blooms every summer and fall. This is what some of the
3 algae blooms like. This is Iron Gate, I think.

4 PATRICK HIGGINS: This is Copco, I think. But
5 they are very similar.

6 ELI ASARIAN: Yeah. We think that the dominant
7 species that is occurring in these reservoirs in the same
8 one that's dominant in Upper Klamath Lake. That's the
9 *Aphanizomenon flos-aquae*, the blue-green algae. But we
10 don't know this for sure because we don't have access yet to
11 PacifiCorps' data. They have been collecting information on
12 species abundance, and we haven't been able to get access to
13 that data, so that has hampered our ability to analyze the
14 project.

15 So these algae, as I mentioned, they take nitrogen and
16 carbon out of the air and add it to the water and contribute
17 to nutrient problems downstream. And that algae is then
18 flushed downstream where it decomposes and causes water
19 quality problems. The algae blooms and the dieouts of the
20 algae causes problems for water quality and also decreases
21 the recreational value of the reservoirs because they smell
22 bad and are not pleasing to the eye sometimes.

23 PATRICK HIGGINS: Dyed green.

24 ELI ASARIAN: So in the river this is one of the
25 processes that allows the river to clean itself. There is

1 an easterly because the hyporheic zone. This is surface
2 water, and here is ground water underneath the channel, and
3 then the zone of gravel-sand-boulder matrix. Underneath the
4 stream channel is the area where the surface water and
5 ground water are sort of mixing back and forth together.
6 When you have nutrient-rich water that enters that
7 surface-water/ground-water interface, there is bacteria in
8 there that are able to take nitrogen in the form of nitrate
9 -- that's a form of nitrogen that is a plant nutrient, and
10 it's able to transform that into nitrogen gas. That gas
11 then bubbles up and goes off into the atmosphere. So that's
12 a reduction of nitrogen from the system as a benefit to
13 water quality.

14 PATRICK HIGGINS: South Platt study?

15 ELI ASARIAN: Yeah. So there's been no research
16 of the magnitude of that effect in the Klamath River. There
17 has been some studies elsewhere in the country; for
18 instance, in the South Platt River in Colorado they have
19 determined that in a six-kilometer reach, they found 90
20 percent of the nitrate that was in the water was removed by
21 this process of the denitrification in the hyporheic zone.

22 PATRICK HIGGINS: In combination with algae.

23 ELI ASARIAN: They didn't really talk about algae,
24 but there was a net reduction in that.

25 So we have not idea what the magnitude of this is on

1 the Klamath, and we think that is something that should be
2 looked into.

3 Another process, and this is probably a more dominant
4 one in the Klamath River, is that there are algae that grow
5 in the river reaches. And these algae are different than
6 the free floating algae that grow to the reservoirs because
7 they're attached to the bottom of the reservoir; they are
8 not attached to the bottom of the river. They are not free
9 floating at the water surface like they are in the
10 reservoirs. So these are both algae -- attached algae --
11 and then also sometimes -- there's many, many names --
12 sometimes known as periphyton, or bed algae, and they are
13 also rooted plants that grow on the bottom of the stream
14 channel. They can be extremely effective at removing
15 nutrients, ammonia and nitrates, which are two forms of
16 nitrogen which are major plant nutrients that fuel plant
17 growth.

18 We need to quantify this ability of the attached algae
19 to remove nutrients from the water column if we are to
20 really understand what the impacts of the project are on
21 water quality. And this is sort of relevant in, I guess, in
22 two ways: The ability of this attached algae to improve
23 water quality in a project has been reduced in two ways.
24 One of them is that river reaches have been flooded and are
25 now reservoirs. So they just -- you have the free floating

1 algae growing instead, which has an entirely different
2 effect on water quality.

3 And the second is that in the bypass reaches you have
4 less width for the algae to grow. So it's fairly logical
5 that if there's only a tenth of the flow of the river that's
6 in the stream, it's only going to be 30 feet wide instead
7 of 100 feet wide, you're going to have less of this algae
8 growing, and it's going to be able to remove less nutrients.

9 FRED WINCHELL: The attached algae, is their
10 nutrient released when those algae die in the fall? Fred
11 Winchell.

12 ELI ASARIAN: Yeah. That's something that we need
13 to figure out more. They will -- it's not like a redwood
14 tree that's going to live for 2000 years. So they will be
15 released at some time. So that's a thing to study, is when
16 and how much nutrients are released during that process.

17 PATRICK HIGGINS: It's called nutrient spiraling.
18 Essentially those things die, go back into suspension, they
19 can fuel nutrient problems downstream, and at a later time
20 than initially released.

21 ELI ASARIAN: It's kind of this complex dance of
22 the nutrient molecules moving in and out of algae in the
23 underwater column and decomposing and coming back together
24 and sort of looping downstream.

25 We think it's absolutely critical to understand this,

1 to quantify it.

2 I forgot to mention, the peaking reaches, which is JC
3 Boyle, where we have low flows during some part of the day
4 and really high flows during another part of the day, that
5 also cuts down on the ability for this algae to grow because
6 the algae cannot tolerate being wet and dry, wet and dry, so
7 it can only grow in that band that's wet all the time.

8 Also you have basically a flood coming down every day,
9 and that can scour that algae out and prevent it from
10 growing as effectively.

11 So these are what we see as being the key processes
12 that are driving water quality in the project area. First
13 being the algae blooms -- nitrogen, carbon fixation. We
14 talked about that. Nutrient cycling in the reservoirs. We
15 mentioned that a little earlier too. How the nutrients
16 maybe could partially settle out but be resuspended when the
17 lake mixes again or wind currents or waves come up and mix
18 things. The assimilative capacities of the attached algae
19 and macrophytes in the river reaches. Denitrification, the
20 hyporheic zone.

21 Another one is dilution. In the JC Boyle bypass reach
22 there are approximately 200 cubic feet per second of cold,
23 clear spring water, clean water, that is inputting into the
24 river. And so it may be that the improvement that we see in
25 water quality between the beginning of the project and the

1 end might be due solely to this dilution factor. And these
2 springs are going to be there whether or not the dams are
3 the reservoirs and the project is there or not. So it
4 doesn't really seem appropriate to claim the dilution of the
5 spring flows, to claim that as a project benefit because it
6 has nothing to do with the project.

7 So the Quartz Valley Indian community and other tribes
8 have requested studies on -- to study these processes and
9 get data to feed into the process and information. We have
10 been trying to cooperate with PacifiCorp, but we have made a
11 lot of data requests, but we have not received the data.
12 That's been a problem. I mentioned the phytoplankton data,
13 the algae data in the reservoirs. We haven't received that.
14 It's hard for us to analyze something without information.

15 And also some of our study requests, some they have
16 said they would do and some that they haven't. I would say
17 they haven't done more than they have done in terms of study
18 requests.

19 We request that FERC would take into consideration
20 these study requests. You hopefully will see why we they
21 think they are important. And that you will request to
22 PacifiCorp because you have that power to mandate -- we can
23 only request, but you can mandate them to perform certain
24 studies.

25 Three studies that we requested of PacifiCorp. One of

1 them was a nitrogen cycling and transport study. These
2 really complex things of algae blooming and dying and
3 sinking and resuspending and different species of algae,
4 there's a lot of complex things going on. So we really need
5 to study this really closely, and that involves fully
6 analyzing existing data and developing what we call a
7 nitrogen budget, which is sort of you look at a reservoir,
8 or you look at the project as a whole, and you look at how
9 much nitrogen is coming in each month and how much is going
10 out. What's the balance of the checkbook? Is there more
11 adding or more leaving.

12 Determine how do nutrients, and especially nitrogen,
13 move through the reservoirs. What's that dynamic. We also
14 need to quantify or at least come close to quantifying, get
15 some order of magnitude of how much nitrogen is being fixed
16 in these project reservoirs. This is one thing that
17 PacifiCorp really hasn't addressed. They have acknowledged
18 that, you know, that in Upper Klamath Lake these algae, when
19 they bloom, drastically increase the amount of nitrogen
20 coming out of the lake. They have acknowledged that these
21 algae exist in project reservoirs, they have acknowledged
22 that the algae are nitrogen fixing, but they have made no
23 attempt to look at, well, how much nitrogen are they fixing
24 in the project reservoirs. We can pretty much a hundred
25 percent sure there is some nitrogen being fixed in the

1 project reservoirs. And so we need to know how much is it.
2 Is it huge -- is it a huge factor, or is it relatively
3 minor? Is it ten percent of the nitrogen in the reservoir
4 or is it 50 percent or is it 90 percent?

5 Another study we requested was some improvement to the
6 water quality model. That's part of this process PacifiCorp
7 has contracted to an expert modeler who has developed a
8 computer model of how water quality works in the project.
9 And we have requested some changes for some improvements to
10 that model, and that is to sufficiently calibrate and verify
11 the model.

12 What calibration is, you come up with a computer
13 program and you plug in numbers, and you come up with some
14 prediction of what the water quality is at a certain site.
15 The calibration is you compare your prediction to real data,
16 then you adjust your model to fit the real data.

17 Validation is you take another set of data points and
18 you run your computer model, the model comes up with a
19 prediction what of the water quality is at a certain site,
20 then you compare with that another set of data, and that's
21 the validation or verification is how close does the
22 prediction come to reality. And in order for a model to be
23 really useful you have need to know what the accuracy. Are
24 we getting within ten percent usually or one percent, or do
25 we only know it within 50 percent -- or worse. So the model

1 should not be -- shouldn't rely on the models to -- we
2 shouldn't rely on the results of the model for anything
3 other than parameters that have been sufficiently calibrated
4 and verified. At this point we see those as being flow and
5 temperature. The models are really good at predicting that.
6 People have been working on this for fifty years on how to
7 develop a good temperature and flow model. So we feel good
8 about that.

9 Dissolved oxygen, it's not so robust. Not necessarily
10 so reliable results. Then the benthic algae and the
11 nutrients are -- I don't want to say a shot in the dark
12 because it's educational to look at these results, but I
13 don't think we should place too much weight on what they are
14 telling us unless we can get enough data to sufficiently
15 calibrate and verify the model.

16 The benthic algae study was to quantify in a simulative
17 capacity the benthic algae, of those attached algae, that
18 are growing on the bottom of the river reaches, and also
19 that includes how this assimilative capacity to remove
20 nutrients and clean the water, how much of that is affected
21 by the peaking and the bypass reaches. Also the flooding of
22 river reaches in the reservoir. We want to see a number:
23 This how many kilograms of nitrogen per day kind of thing.
24 And that will help us judge the project.

25 So the lower Klamath River suffers from extremely

1 impaired water quality. And the conditions sometime can get
2 so bad that they are actually deadly for salmonids. Either
3 the water quality -- like there's not enough oxygen for the
4 fish to breathe and they die, or it can be more subtle, like
5 the poor water quality makes the fish kind of sick and their
6 kidneys aren't functioning as well so they get a kidney
7 infection, and they are not able to survive and make it to
8 the ocean.

9 So the major problem is that there's nutrient-rich warm
10 water, and when you combine nutrients, sunlight, and warmth
11 what you get is massive blooms of the attached algae and
12 macrophytes growing at the bottom of the river. Those algae
13 can cause a big swing in the amount of oxygen that is
14 dissolved in the water. Fish are animals and they need to
15 breath oxygen. If there's not enough oxygen in the water,
16 they are either stressed out or in worst case scenario, they
17 can die.

18 The algae also cause fluctuations in the pH; that's the
19 acidity and alkalinity of the water. I will talk about
20 these issues in a little bit. Ammonia is a toxic form of
21 nitrogen. It's a toxic nitrogen-containing molecule. Those
22 levels can be high in the Klamath River, especially right
23 below Iron Gate reservoir and the other reservoirs because
24 there are processes that happen in the reservoirs to create
25 ammonia.

1 I mentioned earlier what's called nutrient spiraling,
2 where nutrient flowing out from Iron Gate dam can sort of
3 move through various forms and sort of cascade down, and we
4 need to understand those dynamics.

5 REBEKAH SLUSS: I think we should probably take a
6 break.

7 ELI ASARIAN: Sounds good.

8 (Whereupon, a recess was taken.)

9 ELI ASARIAN: Here is a list of things that we
10 think that FERC and PacifiCorp, FERC Environmental Impact
11 Statement needs to address. And these are water
12 temperatures, nutrients, pH, dissolved oxygen, ammonia
13 toxicity, fish disease, taste and odor compounds and toxic
14 algae. We think the project is impacting these things, and
15 so that needs to be looked at from our perspective.

16 Water temperature, I won't explain the graph, but
17 basically the water quality model has shown that the
18 reservoirs are cooling the river in the springtime. So the
19 reservoirs make the water cooler than it would have been
20 naturally in the springtime. In the early summer they are
21 also cooling it, and about in the late summer it switches,
22 and the reservoirs make the river warmer than it would have
23 been historically.

24 RALEIGH WILSON: Can you show me what the lines
25 mean?

1 ELI ASARIAN: Yeah. This is -- this gray is the
2 "without project." So that's basically all dams removed.
3 "Existing" is current configuration with Iron Gate, Copco,
4 et cetera. This line is sort of the difference between the
5 two, center ground zero. The take on that is that it's
6 cooler in the spring and early summer and warmer in the
7 fall.

8 PATRICK HIGGINS: Has to do with the thermal mass
9 of the reservoir?

10 ELI ASARIAN: So it holds warmth and cool.

11 RALEIGH WILSON: The degree changes you had up
12 there were five, ten degrees?

13 ELI ASARIAN: Five degrees Celsius. In terms of
14 fish response that could be huge. It could be almost the
15 difference between optimum habitat and unlivable.

16 Effects on adult Chinook salmon: Because it's warmer
17 than optimal during the fall, the reservoirs have heated the
18 river during the fall, that's when the Chinook salmon are
19 spawning, the fall-run Chinook. When the adults when they
20 get to hot and get stressed out, the eggs would mature too
21 fast. Once the eggs are deposited in the gravels, they are
22 really vulnerable to warmth that could either kill some of
23 them or stress them out.

24 In response to this, the Chinook, the timing of when
25 the fish arrive in the river, has actually shifted later

1 about two weeks, I think, since Iron Gate dam was put in to
2 sort try to compensate for that. And that may still be
3 changing. But that's something we just found out about, I
4 think, in the last year or two looking at the information.

5 One of the really bad effects of this timing, this
6 shift later, is that now the Klamath run, Klamath Chinook
7 and the Trinity Chinook are in the Klamath River at the same
8 time, or at least partially overlapping, whereas before the
9 Klamath fish would come through and be out and the Trinity
10 fish would come in. Now they are in the river at the same
11 time, which is increasing risks of crowding and disease and
12 stress, and this may have been one of the factors that
13 contributed to the fish kill.

14 Juvenile fish, the effect of that cold springtime
15 temperatures is going to slow them down. They won't grow as
16 fast. The slower growth means they will be larger -- they
17 won't go to the ocean until they reach a certain size, so
18 they will spend longer in the river. Water quality in the
19 river is bad so therefore they are going to be stressed out.
20 Early summer cooling may help fish, because in early summer
21 temperatures are high. But it's likely those benefits would
22 be outweighed by the detriments during the rest of the year.

23 Here's just a slide of what the water looked like
24 coming out of Iron Gate reservoir. There's foam and brown
25 coloration, just generally, just outright nasty. And the

1 data and observations shows that this bad water quality
2 extends far, far, far downstream of Iron Gate.

3 RALEIGH WILSON: How far down?

4 ELI ASARIAN: You can still see these bubbles
5 where the Trinity and the Klamath come together, 150 miles
6 downstream from there. But I don't know, the really bad
7 area of water quality, maybe 50 miles?

8 PATRICK HIGGINS: The data shows some really
9 alarming anomalies in water quality which indicate
10 photosynthesis is operating all the way down to at least
11 Ike's Falls and the Orleans areas; depressed dissolved
12 oxygen indicating photosynthetic activity in Orleans dropped
13 to lethal levels. He's going to touch on that.

14 Unionized ammonia at Ike's Falls, which is 120 miles
15 below Iron Gate, and that's indicating that your pH and
16 temperature are way out of whack. Isn't just like right
17 below Iron Gate and that's it. It's like this nutrient
18 spiraling where stuff travels at night or cuts loose from
19 these other algae beds and redissolves, creates these
20 situations well below Scott, and we can get well below the
21 area, because this is well below the Scott for a number of
22 reasons.

23 ELI ASARIAN: Here is just a photograph of the
24 attached algae. I talked some about this. I wanted to show
25 you the pictures here and show that you that this is an

1 indication of poor water quality and high nutrient levels.
2 You see some places below Iron Gate the entire bed of the
3 river is covered with this stuff.

4 Is the algae good or bad? It's removing nutrients from
5 the water at least on a seasonal basis. If we took the dams
6 out there would be more algae higher up, say below Link
7 River, and that water quality would be bad there, but at
8 least it would be improving the water quality, but by the
9 time you got down lower, the water quality is better, so it
10 would get better faster.

11 PATRICK HIGGINS: What's happening on the right is
12 where the river is too turbulent to have that attached
13 algae, it gets the periphyton, when it looks that fuzzy,
14 that means you're really are choking with nutrients, and
15 that's well below the Scott right there.

16 ELI ASARIAN: So some quick chemistry stuff.
17 Photosynthesis, green plants growing, growing in water.
18 That makes the water more alkaline. It raises the pH, and
19 it does that by removal of the carbon dioxide from the water
20 as part of the reaction.

21 In a system that has -- some systems, particularly
22 those with a lot of limestone geology have what's called
23 buffering where there's molecules that are in the water that
24 buffer the river from these changes in pH. Instead of
25 having swings like this, you might just have little swings

1 in pH on a daily basis, but the Klamath River is lacking in
2 that type of geology, so it's vulnerable to pH fluctuations.

3 Here's an example some pH data at various sites in the
4 Klamath River listed in the downstream direction, starting
5 above Copco reservoir and going down to Ike's Falls. That's
6 sort of, I guess, maybe half way between Iron Gate and
7 Trinity. This graph here is showing that the pH conditions
8 are extremely high in the project area. The graph here
9 starts at 8. Neutral water is down here at 7. So we would
10 ideally like to see the range maybe within .5 units of 7,
11 but we are seeing -- this is sort of the upper end, but we
12 are seeing the high values in some places at much as 9.7
13 which is extremely stressful to fish. Also can combine with
14 other factors to be really bad for fish. This is driven by
15 the photosynthesis of the algae attached to the bottom of
16 the river.

17 I'm going to talk about how pH relates to ammonia in a
18 later slide.

19 PATRICK HIGGINS: That's one of the indications of
20 nutrient effects well downstream of the Scott.

21 ELI ASARIAN: Here's dissolved oxygen at Big Bar,
22 near Orleans downstream of the Scott River by quite a ways.
23 These are dissolved oxygen in milligrams per liter and time
24 of day: Middle of the night, 3:00 o'clock in the morning,
25 on up to noon the next day. So dissolved oxygen during the

1 day the algae are actually adding oxygen to the water, so
2 you see elevated levels of oxygen. Then at night they are
3 not photosynthesizing anymore because there is no sunlight,
4 so it's called respiration. So it's the opposite of
5 photosynthesis is what they do at night, and that sucks
6 oxygen out of the water. So the dissolved oxygen level here
7 has gotten down to this one night, got down to 3.4 parts per
8 million. And that pretty much is lethal to salmonids.

9 We put in here a reference value of 5 milligrams per
10 liter that is generally stressful. It's not quite the worst
11 case scenario on the planet, but it's not uncommon for this
12 to happen somewhere on the river -- I don't know, each year,
13 every, low D.O. events are common. This is sort of a bad
14 case scenario, not the worst, but very bad.

15 Some stuff on ammonia. There is two forms of ammonia;
16 one is less toxic, that's ammonium ion. Then there's
17 un-ionized or dissolved ammonia. That one is highly toxic;
18 this one is less toxic.

19 The toxicity of ammonia to an organism like a fish is
20 depending on how much ammonia is there, and then which form
21 is it in? Is it the high toxic or less toxic? And which
22 form it takes is dependent on the temperature and the pH of
23 the water. I mean, when you have high pH's, for instance
24 over 8, and high temperatures, over 25 degrees Celsius, you
25 can get really high level of this toxic ammonia, and that

1 can have really bad consequences for the fish. Dissolved
2 ammonia is so toxic that extremely low levels can be lethal
3 to fish.

4 The project reservoirs generally increase ammonia.
5 This is JC Boyle above the reservoir in blue and below the
6 reservoir in green. From below to above increases in
7 ammonia as the water flows through the reservoir.

8 Ammonia is the form of nitrogen that plants can uptake
9 the fastest, and is most easy for them to grow. And so this
10 is stimulating growth of the algae downstream, which has
11 causing dissolved oxygen problems, et cetera, and it's
12 increasing in general.

13 Here's an example of un-ionized or dissolved ammonia.
14 And this is at the outfall of Iron Gate dam on four
15 different dates in 1997. And on one occasion here it's --
16 really a small level, it's only 30 parts per billion, which
17 is, you know, low, but it's highly toxic. This is toxic
18 enough to be in the range of lethal, not necessarily lethal,
19 but potentially or likely lethal

20 PATRICK HIGGINS: The fish go into hyper stress
21 because they have to throw -- just like if somebody put
22 ammonia in their lungs, they are trying to get that ammonia
23 out of their system, and so they use their kidney and their
24 gills to try to do that.

25 ELI ASARIAN: So the water quality in the river is

1 stressing the fish out and making them more vulnerable to
2 disease. Some years there are actually hundreds of
3 thousands of juvenile salmon and steelhead -- I think the
4 Chinook have been hardest hit as juveniles. It can be 40,
5 50, 60, 70, 80, 90 percent of the fish coming out -- we
6 don't know exactly, but it's in that ballpark, are dying of
7 disease or become weakened to the point where they won't
8 survive in the ocean because of diseases they have caught.

9 Here's some data on kidney parasites. Looking at three
10 sites in the Klamath River, one in the Salmon and one in the
11 Trinity. What it is showing is that 80 to 90 percent of the
12 fish in the Klamath River -- these downstream migrant
13 juveniles, mostly Chinook salmon, 80 to 90 percent of these
14 things have detectable levels of kidney parasites. And 50
15 percent of them is severe infection such that these fish are
16 not going to survive transition to the ocean.

17 In the Trinity and the Salmon where the water quality
18 is better, there's a very low incidence of that. But also
19 note that Trinity fish, which, when they are still in the
20 Trinity, are not infected with the kidney parasite. By the
21 time they get to the estuary, they have contracted the
22 parasite. So fish from everywhere in the Klamath basin all
23 have to swim through the lower Klamath, and they pick up
24 these parasites and disease.

25 One of the major diseases is called C. shasta,

1 Ceratomyxa shasta. It's a myxozoan parasite. It's common
2 in the Klamath basin, and can be deadly to salmonids. It
3 has a host, which is a polychaete. Looks of like a little
4 wormy kind of thing. They were really small. And this
5 host, its polychaete worm host, it takes both the organism
6 -- the parasite moves back and forth between the two hosts,
7 the fish and the polychaete.

8 The polychaete host of the C. shasta parasite, its
9 favorite habitat is these long, stringy attached algae
10 filaments which are extremely common in nutrient-rich waters
11 below Iron Gate dam. And so if we could reduce the nutrient
12 loads to the Klamath, we would probably reduce the abundance
13 of the polychaete host, which would probably reduce the
14 abundance of C. shasta, which would probably reduce fish
15 mortality, and the juvenile fish would have a better chance
16 of surviving.

17 PATRICK HIGGINS: These are true outbreaks because
18 these fish have been exposed to this disease since time
19 immemorial, and if you look at fish populations in the
20 Klamath, every one of them's resistance to C. shasta, except
21 on hanging trout population in Jenny Creek, that means they
22 should be resistant. The number of the parasites is one
23 thing, the other thing is what kind of stress are those fish
24 under? I mean, it's like there are cold germs here in the
25 room, but we are not coming down with one. But if we are

1 severely stressed and chilled from rolling in the snow bank,
2 we would probably get it. It's a dual thing. It's not just
3 the presence of this organism, it's quantity. But also what
4 is the resistance to stress because it doesn't become an
5 epidemic unless the fish are susceptible and stressed.

6 ELI ASARIAN: Taste and odor compounds. When
7 algae grow and decay they can produce these funky broad
8 class of compounds that are called taste and odor compounds
9 that have a weird, funny smell. It's sort of sounds like a
10 silly thing. Why should we care if the water tastes bad or
11 smells bad. But it actually can affect the taste of the
12 fish and that in turn can impact the food value of the fish.
13 And the recreational -- fisherman are less likely to want to
14 come to the area to fish if the fish taste bad, and they
15 don't eat them, and they don't taste as good, that's going
16 to be an economic effect on the community. Also it's a food
17 source for the tribe, and it's diminished in value.

18 Aeration can remove those compounds and are often
19 formed under aeration mixing with oxygen. These compounds
20 are often formed in what's called anaerobic or
21 oxygen-deprived situation such as the bottom of the
22 reservoirs.

23 The a big reason is because of the reservoir. They are
24 formed in the reservoir and they decrease as the river flows
25 due to aeration, but more aeration would get rid of them

1 faster. If the reservoir were not there, they would have
2 been there in the first place.

3 Some highly recommended reading is Appendix 13A from
4 Water Quality Final Technical Report, Quality/Aesthetics
5 survey Responses. It's a recreational survey of anglers,
6 boaters, and swimmers in the project area. And they said
7 things like: Bad smell this year. Slimy, green, foamy,
8 yuck. And extremely filthy. Also dead fish everywhere. To
9 paint a mental picture for you of how foul things can be
10 around the reservoirs in the impacted river.

11 We recently took an algae sample from -- I think it was
12 on September 30th approximately from the shoreline of Copco
13 reservoir, and I found extremely high level of a toxic
14 blue-green algae, different than the Aphanizomenon
15 flos-aquae, which is the common one at Upper Klamath Lake.
16 This one is called Microcystis aeruginosa. Detected level of
17 one-and-a-half million cells per milliliter. A milliliter
18 is one cubic centimeter, an area this big. That's
19 one-and-a-half million cells.

20 When levels get to 15,000 cells per milliliter, the
21 State of Oregon's protocol is to close the lake to swimming.
22 At 100,000 cells per milliliter they close the lake
23 completely, you're not even supposed to go out in the boat.
24 This is in Copco, which is in California, we haven't dealt
25 with this so much in California. So nothing happened

1 basically when we found this sample.

2 We also tested the sample for the levels of the toxin.
3 The algae produces a toxin called microcystin. Levels were
4 482 micrograms per liter. That's 482 times the World Health
5 Organization drinking water limits. People don't drink
6 straight out of Copco on purpose, but if you are swimming
7 there, you might choke, and choke some down. So it's a
8 danger to, mostly to pets and livestock and people,
9 especially children because they're smaller. So smaller
10 amounts of the compound could affect them more.

11 And we learned that -- at a meeting in Yreka a few
12 weeks previous to that, that PacifiCorp had previously found
13 this Microcystus algae, and had informed the Siskiyou County
14 Health Department, so they knew that it was somewhat of a
15 problem or they wouldn't have gone to the County Health
16 Department. But I looked through every place that I thought
17 that this would be mentioned in the final license
18 application, and I didn't find it anywhere. And --

19 REBEKAH SLUSS: Did you guys see it? Because that
20 was something that we were really concerned about. The fact
21 that they knew about it and didn't say anything.

22 FRED WINCHELL: I'm not the primary reviewer of
23 the Water Quality, but I don't recall seeing it.

24 PATRICK HIGGINS: We are pretty familiar with the
25 7,000 pages.

1 ELI ASARIAN: We searched by keyword and didn't
2 find it. But prove me wrong if you can.

3 We think that FERC needs to force PacifiCorp to deal
4 with this or deal with it itself in the analysis. For
5 instance, having the phytoplankton data that showed us --
6 they may be finding this every day, or maybe they have found
7 it just a few times, we don't know because we don't have the
8 data. So we are hoping that you guys can help us get the
9 data.

10 in conclusion we think decommissioning should be
11 studied as an alternative. All state and federal agencies,
12 California State Water Resources Control Board, the
13 Department of Fish and Game, federal agencies like NOAA
14 Fisheries, U.S. Fish and Wildlife Service have all agreed
15 that dam removal should be studied. Because it's fairly
16 evident that the project is impacting water quality, fish
17 passage, fisheries. So we need look at maybe the costs of
18 the impacts outweigh the benefits.

19 The project doesn't supply significant amounts of water
20 for agriculture. It's a separate issue from the upper
21 basin, the water wars, I guess you could say.

22 removing the dams is not going to affect agricultural
23 interests with the exception of Keno dam. They use Keno to
24 maintain the levels of some irrigation canals. If Keno were
25 to come out, either farming would have to be reduced or they

1 would have to pump the water out.

2 PATRICK HIGGINS: They would have to pay the
3 pumping costs like they did before Keno was installed.

4 ELI ASARIAN: Or somebody could pay it for them.
5 The project produces a relatively small amount of
6 electricity, 161 megawatts, only two percent of PacifiCorp's
7 power, and contrast that to the new plant in Klamath Falls
8 generation plant is 480 megawatts. So it's a relatively
9 small amount of electricity with large environmental
10 consequences.

11 The California Energy Commission says that there's cost
12 effectively ways to replace the generation capacity.

13 PATRICK HIGGINS: If you're not familiar, you may
14 be, but Salkade (phonetic) proposed by Klamath Falls in the
15 Keno reach. They were basically going to do the same thing
16 PacifiCorp has been doing, and they couldn't get it passed
17 environmentally, and can instead they went this route, and
18 it pays. So replacement cost obviously was cost effective
19 for them as an alternative to their hydropower project which
20 they had proposed.

21 ELI ASARIAN: If the project were to be
22 decommissioned, dams were removed, we would likely see
23 improved water quality in the Klamath, improved survivals of
24 salmon and steelhead and increase in the populations. We
25 would see salmon returning to Oregon for the first time in a

1 hundred years -- the Oregon part of the Klamath River.

2 With an increase in population and benefits of water
3 quality, increased tourism, and recreational and fishing.
4 Might see improved property values. Most people would
5 rather live on a scenic river than on a reservoir that
6 smells like a sewage treatment plant. And we would see
7 improved quality of life for the Indian tribes in the basin.
8 This is really a critical time for the Klamath River.

9 We know something about the cycles that happen in the
10 ocean. We know that we are now in a productive ocean cycle
11 where conditions are really good for salmon. If the
12 juveniles can make it to the ocean, they have a good chance
13 of surviving to return, right now.

14 These things are cyclical, and we think that the next
15 decline cycle is going to start 2015 and last through 2050.
16 We are going to have poor ocean conditions during that time,
17 and salmon are going to have lower survival rates when they
18 go to the ocean. So if we are having problems in seeing
19 declining populations now, we need to consider what is going
20 to happen when the ocean flips around, instead of the ocean
21 as a benefit, the ocean as a detriment. That could be
22 potentially huge.

23 PATRICK HIGGINS: These could also lead to on-land
24 climatic cycles, wet during good ocean, dry during bad
25 ocean. That would also be degraded freshwater habitat in

1 many years because of drier climatic cycles.

2 ELI ASARIAN: This chart shows Iron Gate hatchery
3 returns, numbers of fish here in 1970 each year to 2002.
4 Fairly substantial decrease in returning populations of
5 steelhead to Iron Gate hatchery to extremely low levels.

6 PATRICK HIGGINS: This is a drought circle that
7 started in 1986 and it lasted through 1994 with the
8 exception of the 1993 water year. What you're seeing here
9 is the Klamath hatchery steelhead raised to six inches in
10 length could not live the 190 miles to the ocean. And that
11 1996 essentially says that Iron Gate hatchery steelhead went
12 extinct. This is a fish that is shepherded through 90
13 percent of its life cycle, and it still went out of
14 existence.

15 ELI ASARIAN: Part of the reason for that is poor
16 water quality, fish catching disease just in swimming. If
17 they turn and head straight down and swim the whole way,
18 they still might be exposed long enough to die.

19 There was massive fish kill in September, 2002 where at
20 lease 34,000 adult salmon died. It's an indication that
21 there's something wrong in the Klamath, and it's not the
22 only indication.

23 I showed previous slides that showed many problems in
24 the Klamath. This is like the most glaring warning sign
25 that we have a problem. We may lose salmon and steelhead

1 stock if something is not done to benefit the fish.

2 So we need to consider whether or not to relicense this
3 project, and if to relicense, you know, how so and under
4 what conditions. We need to look at the timing of this. 30
5 to 50 years, that's going to cover that entire poor ocean
6 cycle. So we need to be conscious that decisions that we
7 make now are going to have impacts for future generations of
8 people, future generations of fish.

9 And there's problems. If we don't do anything about
10 the problems, they may just keep getting worse. The dams
11 have been there for fifty years, but the river may still not
12 have reached equilibrium with what the changes those dams
13 are making to the system. We may be seeing a continual
14 decline. If we are going to do something, this is the best
15 time ever to do it.

16 And the tribes have been in the basin for at least
17 10,000 years, since time immemorial. If some of these fish
18 species goes extinct, they may be gone forever, and that's
19 something that -- the tribes are going to be here forever,
20 so that's something that has extremely long-term serious
21 consequences.

22 And that's the end of my presentation.

23 (Applause)

24 REBEKAH SLUSS: I want to thank you guys for
25 listening. I wanted to make sure that the counsel had a

1 chance to say their feelings about it. After all the
2 scientific information that was given to you, I just wanted
3 to give the counsel a chance.

4 AARON PETERS: I think it's a pretty
5 self-explanatory. If there something that is not done soon,
6 we are looking at water quality in fishing, we are looking
7 at what effect is that going to have on human beings'
8 livelihood.

9 HAROLD BENNETT: It's called extinction. It will
10 kill off our tribes. The people that eat and live and eat
11 all of these fish and the animals right around it, if
12 there's no more fish, it's slowly killing us off.

13 I remember when I was a kid I could go right down here
14 to the Scott River, and we used to fish for our fish.
15 That's what we did. And now we don't have the runs anymore.
16 The fish aren't there. It's poor water quality, and it's
17 taking from us. I've seen a dramatic change in 20 years. I
18 don't know the effects on my kids or his kids. There might
19 not be fish. I might have to take them to the museum to
20 show them a fish, and that's sad. And it's really just
21 changing our lives.

22 RALEIGH WILSON: Is the Scott River the primary
23 fishing location for the tribe? Or up in Oregon is there
24 fishing sites?

25 HAROLD BENNETT: Scott River is a tributary to the

1 Klamath. We have the spots on the Klamath that we go down
2 and have ceremonies for fish to come. And no Klamath fish,
3 no ceremonies.

4 REBEKAH SLUSS: So we are looking at a threat to a
5 whole culture, not only Quartz Valley, but all of the tribes
6 along the basin that depend on the fish for sustenance as
7 well as ceremonial. You know, one of the dances is after
8 the first salmon is sighted. You know, sometimes it's hard
9 to see a fish. So, I don't know, that's just another
10 danger.

11 FRIEDA BENNETT: Now with the fish being polluted
12 with ammonia -- Frieda Bennett is speaking -- then it just,
13 you're eating this food that might not be well for you to
14 eat. Then you get sick, and your kids are getting sick, and
15 it's offered the food that we were traditionally raised to
16 eat.

17 REBEKAH SLUSS: One thing we actually talked
18 about, we were joking, but we thought we would get some
19 salmon from the mid Klamath and feed it to you guys so you
20 could taste the difference. I mean, it's a joke, but it's
21 true. You know, you really can taste the difference.

22 Around here, when people say that they got salmon, the
23 first question that you ask is where did you get it from?
24 If they got it up river, you don't want to eat it. People
25 that don't know, eat it. But people that know get it

1 farther down.

2 RALEIGH WILSON: Do you have data that you can
3 provide to FERC on changes in diet within the tribe, or sort
4 of what your harvests returns have been, I mean, the ability
5 of the tribe to utilize traditional food sources that we can
6 include in our environmental analysis?

7 PATRICK HIGGINS: You know, actually there has
8 recently been a study. I can't remember its geography, but
9 it probably chronicles something Pacific Northwest region.
10 It's chronicled. I think there are studies of Pacific
11 Northwest tribes where their health does decline. When they
12 switch off from salmon, the omega-three fatty acids, an
13 added staple, to something else and their health declines.
14 We will make sure we get that for you.

15 It's not Klamath based, but I think the same is true
16 with Klamath cultures.

17 REBEKAH SLUSS: I know that there is a study
18 underway right now, and looking at that and looking at the
19 way people's health has changed by not having access to the
20 traditional food sources. The Karuk tribe is working on
21 that.

22 JOHN MUDRE: We have seen a draft of that.

23 REBEKAH SLUSS: I think you got a lot of data from
24 the clinic in Yreka, and that's where the Quartz Valley
25 people go to.

1 PATRICK HIGGINS: There may be a basis, is what
2 you're saying?

3 REBEKAH SLUSS: Yeah. I'm not sure if it's
4 completed.

5 JOHN MUDRE: They filed the draft report with the
6 Commission, so I've seen that.

7 RALEIGH WILSON: Just sort of to explain, there
8 are so many processes going on at once. I find it
9 interesting to just maybe to sort of explain a dynamic that
10 might be going on here in terms of how the tribe might want
11 to participate. It sounds like a lot of the fishery issue,
12 and even though we were having a discussion during the break
13 with Russ who works for PacifiCorp, and I guess that the
14 fish passage issue, in a lot of ways, depends on water
15 quality issues. What's interesting about that for me, and
16 in the licensing process, and even though FERC is concerned
17 about water quality, because of the Clean Water Act, that's
18 really a State-run process. And as John was saying earlier,
19 we just take what the State gives us on water quality and
20 put it into our license. Then that becomes an enforcement
21 issue for us.

22 But it's really the State who develops the water
23 quality parameters. And they don't have the same
24 relationship with you all that we have. It's a federal
25 trust relationship. But at the same time you should do

1 everything you can to work with those folks on development
2 of their water quality. Sounds to me like that's going to
3 have a big impact on how feel about fish passage or the
4 availability of fish.

5 JOHN MUDRE: We do look at water quality too. And
6 we make requirements for improvements in water quality
7 independent of the state. They have been licenses where we
8 have waived their certification authority, and we have
9 required things for the improvement of water quality too.
10 So they're not the only ones that do something with water
11 quality. There may be something in addition to what we do.
12 But we would -- when we look at something, we look at and
13 consider it in the process, you know, whether they are
14 involved or not.

15 RALEIGH WILSON: Right. I guess the way I think
16 of that point also is -- well, the State is the water
17 quality certifying agency. It says that in our NEPA
18 document. But the federal agent, agencies like us, and the
19 Fish and Wildlife and the National Fishery Service will be
20 thinking more specifically about the fish which are related
21 to the water quality. So it's possible if the State water
22 quality certification in our view is not strong enough to
23 support the fish, you could get the Commission or one of
24 these other federal agencies suggesting or recommending or
25 including in the license something that kind of goes on top

1 of whatever State water quality issues to make it stronger
2 to support the fish.

3 That's, as I think John was saying, that's kind of a
4 complex way how the whole licensing process could work out.

5 AARON PETERS: I believe that the tribes above us
6 and tribes below us met with the State earlier. There is a
7 good working relationship, and they are aware of our
8 concern.

9 REBEKAH SLUSS: As far as the CMDL and the
10 Klamath, the EPA is heading that one up. We have a trust
11 relationship with them. And we have been to several
12 government meetings. That's a plus. We are working on our
13 relationship with the State.

14 PATRICK HIGGINS: Pacific Corp, you know, in the
15 press, they were cooperating, but when we request them for
16 data, they are not always receptive. How does FERC view
17 that? And, in other words, if we had access to their data,
18 we could throw some light on some of these subjects. But in
19 the absence of that data, these questions remain unanswered.

20 One is, do you guys have access to all of their data?
21 And when you have access to it, will you relinquish it to
22 the rest of us? Or how do you view, for example,
23 (unintelligible) decrease on indigenous peoples with
24 indifference with regard to their data requests?

25 JOHN MUDRE: Well, I think that the bottom line is

1 we need folks on which to base a licensing decision. If we
2 think we need information, we ask for it. And it's
3 incumbent upon the licensee to provide us that information.
4 Any information they provide us becomes part of the public
5 record and it's available to any party that wants to look at
6 it.

7 PATRICK HIGGINS: So if we provided you, then,
8 with a list of the data that we requested, and you also
9 found it of interest, you could get it from PacifiCorp and
10 --

11 JOHN MUDRE: Right, that's what the additional
12 study requests -- us asking for those -- that's why we do
13 that, to hear from the people what they think we need to
14 consider. And if it wasn't in the license application to
15 start with, we ask basically what's missing. And they say:
16 You tell us what's missing, what you think is missing. We
17 look at it and make a decision. Do we need that
18 information? Maybe we already have it, maybe from other
19 source that you aren't aware of or something. But if we
20 decide that we need it, we ask for it either in requiring
21 additional studies or additional information requests or
22 whatever you want to call it.

23 ELI ASARIAN: I have a follow-up on this. This is
24 Eli Asarian.

25 When we were writing our initial study request, I was

1 thinking more in terms of what is new data, what are new
2 studies. So we didn't submit any additional study request.
3 We need access to data that is already collected. So we did
4 we miss our window of opportunity on that?

5 JOHN MUDRE: No. I think the licensee, license
6 applicant, same thing. They need to -- they are required to
7 provide us certain information if they want a license. They
8 are not required to give you any information that you may
9 ask for. But if it's information that we are going to use
10 in our licensing decision, we have to make sure that it's in
11 the public record, and anyone can look at it so they can
12 understand the basis and see why we are issuing our decision
13 on. They may not -- there's no requirement that they have
14 to give you everything that you ask for. But if it's
15 something we need and we are going to use in our license
16 decision, then it has to be in the public record.

17 ELI ASARIAN: So we should try to convince you
18 that it's important?

19 RALEIGH WILSON: Maybe you guys -- this is Raleigh
20 Wilson -- maybe you guys already understand this, but what
21 you are describing is sort of a difficulty in the
22 traditional licensing process. One of the reasons why we
23 have gone from a traditional to alternative licensing
24 process and integrated licensing process, in the traditional
25 licensing process it's really up to the applicant on their

1 own to develop information and then submit it to FERC, then
2 we say, well, we need these other things too, or that's good
3 enough.

4 The alternative the theory is everybody is supposed to
5 collaboratively develop the information base and submit that
6 to FERC.

7 Then in the integrated, what's going to happen is FERC,
8 the parties, and the licensee are going to try to develop
9 that information together.

10 JOHN MUDRE: Agree beforehand on what's needed
11 that so we don't have additional study requests later on.

12 RALEIGH WILSON: What you guys have found yourself
13 in is the traditional process where the applicant is the
14 sole entity responsible for putting information together.
15 We are having collaborative meetings, but really it's their
16 choice how far to follow through on those.

17 PATRICK HIGGINS: The Trust has been meeting with
18 PacifiCorp for about two years; very time consuming, very
19 costly. All the way along PacifiCorp was saying you need
20 that? We are on it. Yet many these questions now remain
21 unanswered and the data not available. So it's kind of
22 shrouded in mystery. Now their stance is they want to
23 settle. So I'm not sure in terms of the Quartz Valley
24 tribes, in particular, but our other water quality clients,
25 the water quality group that we are working for, they don't

1 feel that this process has been straight up. They feel like
2 they have been used in terms of participation. That they
3 have had gratuitous answers that the questions they are
4 raising will be answered. And they are not. Now as we try
5 to answer those as their experts, we do not get the data
6 that we need.

7 And so we look forward to a cooperative working
8 relationship with you guys as you try to discover the
9 answers, and sounds like you up can get the data. I think
10 all the tribes would be pleased if we can make progress.

11 FRED WINCHELL: Fred Winchell. I think part of
12 your question is whether the window has expired for
13 submitting additional study requests. The official window
14 is over for that, but any letter filed on the record with
15 the Commission is considered.

16 JOHN MUDRE: We read everything that comes in. If
17 it comes in at a point where it's something that we can work
18 with, we try to work with it. But obviously if it comes in
19 too late, it's too late. If it's after the DIS has come
20 out, it's too late.

21 RALEIGH WILSON: Just in terms of explaining the
22 various processes, I can't emphasize enough that the
23 traditional process is a notice and comment process. All
24 the communication that is important that comes into FERC in
25 that process is based on written filings. So you can have

1 all the collaborative meetings that you want with the
2 applicant, but really what matters is the paper that's filed
3 with FERC. So that's where you can participate in the
4 process.

5 JOHN MUDRE: It includes like the transcripts.

6 RALEIGH WILSON: Of course.

7 JOHN MUDRE: No one actually writes it and sends
8 it in. This is what we are talking about today; it's going
9 to be in the record and be used by the Commission and by us
10 as we move forward.

11 REBEKAH SLUSS: What is FERC's relationship with
12 the settlement process? Are you guys involved in that at
13 all? There are settlement discussions going on right now
14 with PacifiCorp.

15 JOHN MUDRE: We are not right now. If we were to
16 get involved in it, we would need to probably create what's
17 we call separated staff. We identify people and send out a
18 notice that says these guys are going to work on this
19 settlement as separated staff, which means they are going to
20 try to help move the settlement along, which at the same
21 time means they can no longer advise the Commission on how
22 we ought to -- what it ought to decide in the matter. So
23 they're like, they're not really FERC staff that make the
24 licensing decision anymore. They are helping that process
25 out, but they don't advise the Commission anymore.

1 So they haven't, to my knowledge -- we have gotten no
2 formal request to separate staff at this point. I think
3 that's something that the settlement people are still trying
4 to decide whether they want that or not. Typically if the
5 people ask for it, and we have the resources to do it, we
6 will do it because the Commission thinks that settlements
7 are usually a good idea and that they lead to better
8 licensing decisions.

9 PATRICK HIGGINS: What are the precedents in this
10 regard with regard to if a settlement is reached between
11 PacifiCorp and the parties of substance, of which PEIC has
12 not yet been invited, but if a decision were reached, what
13 does FERC usually do? Say, we say we want \$300 million to
14 leave town. Is there any precedent in terms of where
15 settlements have been arrived at between these parties?
16 They just say that sounds peachy; we can cut our cost?

17 JOHN MUDRE: We need to look at the settlements.
18 We need to determine whether or not they're in the public
19 interest. We need to determine whether -- what parts of the
20 settlement is our jurisdiction and, you know, what parts
21 aren't. A lot of times settlements come in that have very
22 good conditions in them, but there are not something that
23 the Commission can order and enforce because it's outside
24 our jurisdiction. So we can't require those sorts of things
25 in the license.

1 We can't escape our responsibilities under NEPA. We
2 still have to look at what's being proposed under -- and
3 which would mean we still do our environmental analysis

4 PATRICK HIGGINS: So essentially then this would
5 become part --

6 JOHN MUDRE: If it's a settlement alternative, we
7 can include that in our Environmental Analysis.

8 FRED WINCHELL: Follow up one thing Raleigh said
9 is that the proceedings is based on the information that's
10 on the record filed with the Commission, and publicly
11 available information, but any time in the process if you
12 have additional information that you want to submit for
13 consideration, it's important that you file it with FERC and
14 get it into the record. Then we are aware of and can use
15 it.

16 AARON PETERS: I speak not only for the tribe but
17 for outside communities. There's one thing, it's a two-edge
18 sword that is used against us, all the tribes on the river,
19 is the fact that the water quality, the fish run is not what
20 it used to be, it's not the quality of fish. And to prove
21 it, go to the mouth of the Scott River during the fish run,
22 that bar, you would have to look hard to find a bare spot.
23 But now the last few years only a third of that bar is being
24 used for the fisherman that come in. Now, if the water
25 quality is so bad and the fish quality is so bad, here's

1 what I think is being used against tribes is the fact that
2 if fish are diseased or whatever, somebody gets a bad one
3 and they leave -- most of these people come up here to fish
4 on the Klamath River from -- they are from southern
5 California or other neighboring states, we never know.
6 That's something you people need to consider. Just don't
7 look at the local level, but look at our neighboring friends
8 also, not only the tribe, but the people that come from
9 other states for the sport of fishing that the county had
10 relied on for tourism. It's going downhill. It's not like
11 it used to be.

12 There's got to be reasons for that. And I think you
13 got a good display this afternoon of what is causing that.
14 That's all I got to say.

15 REBEKAH SLUSS: Do you have anything else?

16 HAROLD BENNETT: Nothing. I'm good for now.

17 FRED WINCHELL: Emmy? Frieda?

18 PATRICK HIGGINS: I would like to go on the
19 record. Offer you guys another copy of the Klamath Resource
20 Information System. This is a CD that has comprehensive
21 information for the Klamath, and it's about a gigabyte and a
22 half. It's got several hundred reference sources and should
23 be a rich source of information, flow study, endangered fish
24 study by the National Science Foundation, that Long-range
25 Plan for the Klamath, Mid-program for the Klamath River

1 Restoration Program. Really they all have bearing in order
2 to do a good job, this is an essential resource.

3 And you guys can call me at any time that you're trying
4 to use this because it has search functions where it's
5 probably the quickest way to get something of substance in
6 term of your document; make sure that you were cited
7 correctly also that your knowledge base reflects the
8 knowledge base that is here.

9 This river is so well studied. It's amazing. Really
10 before '78 there wasn't much good science since the '30's,
11 but after '78 when they had a fish war at the mouth where
12 the Yurok and other tribes went to war with the State of
13 California, literally, it was almost like an arms struggle,
14 and out of that came the fishing rights that remain to this
15 day and the restoration program. And since then the river
16 had been studied to death.

17 I don't really think from the accumulated information
18 about what's going on that there's too many mysteries left
19 except those we have pointed out in our additional study
20 reports.

21 So that I think you'll find is really key to your
22 success.

23 JOHN MUDRE: You filed this earlier this year with
24 the Commission.

25 PATRICK HIGGINS: Yeah.

1 ELI ASARIAN: I'm just curious. This is Eli
2 Asarian. How does this get reflected in the record when we
3 give a CD? It's different than a stack of paper.

4 JOHN MUDRE: Well, the Commission is still sort
5 of, you know, adjusting to the technological revolution and
6 all that. Everything was paper-based before. Now we accept
7 electronic filings. We have our e-library, a web site where
8 you can look at documents that are filed.

9 We are working at ways to deal with, you know,
10 electronic CD and things like that that are filed.
11 Sometimes they have been broken up into individual files,
12 and they were not the easiest things to work our way
13 through. We are trying to do better.

14 FRED WINCHELL: I think in this case, I think this
15 one is on the record, but it is in many files so ask for the
16 CD's, which I understand are available on request for you
17 guys. This is publicly available information.

18 PATRICK HIGGINS: Are you guys in receipt of the
19 State Water Resources Control Board Overflight of September
20 1 of this year? Had this is DVD that we just received this
21 year. Unfortunately we have tried to duplicate this. I
22 think it would be useful not only for you guys but also for
23 the Quartz Valley Indian community since they are within the
24 project reach.

25 This is a low aerial over-flight, and it really shows

1 very dramatically what we are talking about in the abstract.
2 When you see the water coming from (unintelligible) Spring
3 and it's clear as gin, and it isn't a trout stream, it's
4 probably 2 or 3 percent ammonia. That has gone from split
5 pea soup to clear because ammonia kills all the algae in the
6 water column. The entire Keno reach does that. But you
7 will see that manifest in this one snapshot.

8 When you fly over the Keno regions of a healthy river,
9 at JC Boyle, you can see the rows, you can see the windrows
10 of algae. When you get to Copco and Iron Gate you could
11 actually start to see what we described in terms of the
12 toxic algae that is piled up along the edges, you get this
13 secondary effect of the Microcystis growing in beds of
14 Aphanizomenon. You know, you can talk and talk and talk,
15 and you can see a picture, and you just go "whoa." We think
16 we are going to make the interested Indian community here
17 copies of these. But we will make sure that Mr. Cans
18 (phonetic) gets your copy.

19 JOHN MUDRE: We just talked about how we should
20 file it. He's having trouble making copies of it too. I
21 expect it will be filed with us soon.

22 PATRICK HIGGINS: Actually time didn't allow
23 today, but this worked great on a Sony DVD. Didn't work on
24 our computers, then it worked on our computers, then it
25 didn't work in here. One way or another we are going to

1 make sure that we get stable copies of this because it's,
2 you know, we love charts and graphs, but most people find
3 visual evidence more compelling.

4 FRED WINCHELL: What section of the river does
5 that cover?

6 PATRICK HIGGINS: This actually goes from the
7 middle of Upper Klamath Lake, which has fascinating patters
8 of algal blooms, to the Scott. The current date.

9 REBEKAH SLUSS: Well, thank you, and thank you,
10 counsel. Thank you. We appreciate your time and listening
11 to us.

12 JOHN MUDRE: We are glad we can make it up here.
13 So we will go off the record now.

14 (Whereupon, proceedings terminated in this
15 matter.)

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1 STATE OF CALIFORNIA)

2) SS.

3 COUNTY OF SISKIYOU)

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7 I, DANIEL A. HUMPHREY, CSR, an official court
8 reporter pro tempore of the County of Siskiyou, certify that
9 I took down verbatim in stenographic writing all the
10 proceedings as herein set forth fully, truly, and correctly.

11 That I have caused my stenographic writing,
12 except as provided by the rules on appeal, to be transcribed
13 by computer-assisted transcription, and that the foregoing
14 103 pages constitute my full, true, and correct verbatim
15 transcription of all such stenographic writing.

16 Dated: December 22, 2004, at Yreka, California.

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Daniel A. Humphrey, CSR 5480

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