

1 STUDY DISPUTE RESOLUTION PANEL MEETING
2 AND
3 TECHNICAL CONFERENCE
4 LA GRANGE HYDROELECTRIC PROJECT NO. 14581

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Held at:

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Holiday Inn Sacramento - Capitol Plaza

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300 J Street

15

Sacramento, California

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Tuesday, March 31, 2015

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9:07 a.m. - 12:40 p.m.

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22 Reported by: CAROLE W. BROWNE
23 RPR, CSR NO. 7351

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1 PANEL MEMBERS

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3 NICHOLAS ETTEMA
Federal Energy Regulatory Commission

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5 JONATHAN AMBROSE
6 National Marine Fisheries Service

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8 RICHARD E. CRAVEN
Independent Third-Party Panelist

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12 PARTICIPANTS

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FEDERAL ENERGY REGULATORY COMMISSION

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Jim Hastreiter

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16 NATIONAL MARINE FISHERIES SERVICE

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Larry Thompson

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John Wooster

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Tom Holley

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Steve Edmondson

21 HDR

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John J. Devine

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TURLOCK IRRIGATION DISTRICT

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Steve Boyd

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1 MODESTO IRRIGATION DISTRICT

2 Joy Warren

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 ALSO PRESENT

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7 Anna Brathwaite (MID)

8 Arthur Godwin (TID)

9 Monica Gutierrez (NMFS)

10 Jonathan Knapp (CCSF)

11 Bill Paris (MID)

12 Rhonda Reed (NMFS)

13 William Sears (SFPUC)

14 Chris Shutes (CSPA)

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17 APPEARING TELEPHONICALLY

18 Kathryn Kempton (NOAA)

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2 Tuesday, March 31, 2015, Sacramento, California

3 9:07 a.m. - 12:40 p.m.

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5 PROCEEDINGS

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7 MR. ETTEMA: All right. We'll go ahead and get
8 started. My name is Nick.

9 Just a few logistical things. The bathrooms
10 are right outside this door. Sign-in sheets are on the
11 table outside, and there's two sign-in sheets at the
12 back of the room here. Make sure you sign in today for
13 the record.

14 There's also a series of handouts at the back.
15 It has our agenda and questions from the Panel, things
16 of that nature.

17 I'll go ahead and start with an opening
18 statement.

19 MR. HASTREITER: Can we go around, Nick, and
20 introduce folks?

21 MR. ETTEMA: Yeah, we're going to get to that.

22 MR. HASTREITER: Okay.

23 MR. ETTEMA: I figured a few folks might be a
24 little late, might filter in yet, so we'll just start
25 with this.

1 MR. HASTREITER: Okay.

2 MR. ETTEMA: The technical meeting of the Study
3 Dispute Resolution Panel for a study dispute filed by
4 the National Marine Fisheries Service, NMFS, in the
5 La Grange Hydroelectric Project licensing proceeding is
6 now open.

7 The dispute regards what studies are required
8 in the preparation of an application for an original
9 license by the Turlock Irrigation District and the
10 Modesto Irrigation District, or the Districts.

11 I'm Nicholas Ettema, the Federal Energy
12 Regulatory Commission's representative to the Dispute
13 Panel and the Panel Chair. The other panelists are Jon
14 Ambrose from NMFS, NMFS' representative, and Richard
15 Craven, the independent third-party member of the Panel.

16 Background information on the Panel is provided
17 for viewing near the water cooler at the back of the
18 room. If you'd like a copy of this information, please
19 let me know.

20 In summary of our background information, Jon
21 Ambrose is a fish biologist with over 15 years of
22 experience at NMFS. I, too, am a fish biologist and
23 have worked at FERC for two years. Prior to FERC I
24 worked on the Inyo National Forest. Jon and I were
25 selected to serve on this Panel because we have not had

1 any involvement with the La Grange Hydroelectric Project
2 prior to the dispute filing.

3 We selected Richard Craven to serve as the
4 third Panel member. Richard has over 30 years of
5 environmental consulting experience primarily focused on
6 evaluating impacts of hydroelectric development on
7 aquatic resources. Richard also served as the third
8 Panel member for study dispute regarding the Don Pedro
9 Hydroelectric Project. Richard, Jon, and I do not
10 believe this past experience would bias his
11 interpretation of the study request or recommendation in
12 any way, and Richard's signed statement of impartiality
13 is included with the rest of the handouts today.

14 The purpose of the meeting today is for the
15 Study Dispute Resolution Panel to gather information it
16 needs to make a finding with respect to the information
17 or study requests in dispute concerning the extent to
18 which each criteria set forth in Section 5.9(b) of the
19 Commission's regulations is met or not met and why and
20 make recommendations regarding the disputed study
21 requests based on its findings.

22 Section 5.9(b) refers to the section of the
23 Commission's regulations that list the criteria for
24 studies necessary to prepare a license application. As
25 a panel, we have carefully assessed our role and the

1 context for our work. The regulations make it clear
2 that our recommendations are to be based on the criteria
3 set forth in 5.9(b). Further, when considering the
4 recommendations, the Director's determination will be
5 made with reference to the study criteria in 5.9(b) and
6 any applicable law or Commission policies and practices.

7 The Panel has reviewed the study dispute and
8 developed a meeting schedule and a set of questions that
9 aim to focus the discussion today on the information
10 that we need. The Panel intends to ask meeting
11 participants any questions the Panel may have with
12 regards to the matters in dispute during today's
13 discussion. During this period, the Panel insists it
14 only receives information from the meeting participants,
15 that is, NMFS, FERC, and the Districts.

16 The Panel will only receive information that
17 the Panel deems is consistent with the Statement of the
18 Meeting Purpose or as the Panel otherwise deems
19 necessary to inform its determination. Examples of
20 acceptable information include comments clarifying study
21 goals and objectives, clarification of nexus between
22 project operation and effects, scientific and technical
23 rationale for why the additional studies or information
24 are warranted, or other such information with reference
25 to the study criteria.

1 We commit to NMFS, and the Commission project
2 staff, as parties to this dispute, and to the Districts
3 as the applicant who will carry out the studies, that we
4 will give them each time for a closing statement at the
5 end of the meeting, if they wish to use it. If we have
6 time, we'll invite others to make additional comments or
7 ask questions prior to the closing statements. If
8 necessary, the Panel will adjust the schedule, depending
9 on the pace of the meeting.

10 We reiterate the importance of sticking to the
11 study criteria and to the single study request that is
12 in dispute. We ask everyone to be as concise and
13 focused as possible. And, of course, we expect everyone
14 to be treated with respect.

15 Richard will go over the handouts provided to
16 you today and then we'll begin introductions. After
17 that, we'll allow the participants to make an opening
18 statement if they choose.

19 MR. CRAVEN: Thank you.

20 I believe you have the technical conference
21 agenda, and take a look at that to see what is
22 anticipated today.

23 We'll take a break about 10:45 and we'll
24 adjourn at 1:00 unless there are additional discussions
25 that need to take place, and I believe the chairman is

1 open to adjusting the schedule as needed to accommodate
2 whatever additional questions or discussions need to
3 take place.

4 As Nick indicated, we're looking at 18 CFR
5 5.9(b), the study request criteria. There are seven
6 study request criteria. And these were developed by
7 FERC a number of years ago to develop a clear
8 understanding of what a study is, of what information is
9 needed, and why it is needed.

10 And basically, we have to adhere to these in
11 our evaluation of the project. And, in summary, it's,
12 you know, the seven of them basically are describing the
13 goals and objectives, development resource information
14 as appropriate, any public interest that might be
15 considered, existing information, any nexus between
16 project operations and effects, and how the study
17 effects or results would inform the development of
18 license requirements. And that's the big one for us, I
19 think, Item 5, No. 5; and also No. 6, explain how any
20 proposed study methodology is consistent with generally
21 accepted practices in the scientific community. And No.
22 7 is consideration of levels of effort and cost as
23 applicable.

24 The expectations of the Panel, we're pretty
25 regimented on that, of course, and I believe we have

1 that handout also. There's six items there. And
2 basically we're trying to find out if the -- each
3 information request has met the -- met or not met the
4 FERC requirements.

5 And we're trying to stick with the criteria.
6 We don't really vary from the criteria. We can't bring
7 in other criteria to try to consider the project. And
8 we're limited to our expertise in making the decisions
9 or recommendations. And we're to act independently and
10 we're to share any information that we might gather with
11 other Panel members in helping make a decision. And
12 we're also prohibited from refraining -- we are to
13 refrain from distributing any notes, information, or
14 anything. So thank you.

15 Jon, do you want to go over the questions?

16 MR. ETTEMA: I think we'll do the introductions
17 first, I think. Why don't we start with NMFS. We'll go
18 around the whole table, and then we'll go to the
19 observers in the back of the room afterwards.

20 MR. EDMONDSON: Okay. I'll start off. I'm
21 Steve Edmondson with NMFS.

22 MR. WOOSTER: John Wooster with NMFS.

23 MR. THOMPSON: Larry Thompson with NMFS.

24 MR. HOLLEY: Tom Holley with NMFS.

25 MR. HASTREITER: Jim Hastreiter, Federal Energy

1 Regulatory Commission.

2 MS. WARREN: Joy Warren, Modesto Irrigation
3 District.

4 MR. DEVINE: John Devine, HDR, consultants to
5 the District.

6 MR. BOYD: Steve Boyd, Turlock Irrigation
7 District.

8 MR. ETTEMA: Okay.

9 MR. WOOSTER: Maybe on the phone?

10 MR. ETTEMA: Oh, yeah. On the phone, please.

11 MS. KEMPTON: Hi. I'm Kathryn Kempton with
12 NOAA, general counsel.

13 MR. ETTEMA: Okay. Thank you. Then can we
14 start in the back of the room?

15 MS. GUTIERREZ: Monica Gutierrez, NMFS.

16 MR. PARIS: Bill Paris, P-a-r-i-s, with
17 Modesto.

18 MS. BRATHWAITE: Anna Brathwaite, Modesto
19 Irrigation District.

20 MR. GODWIN: Arthur Godwin, counsel to Turlock
21 Irrigation District.

22 MS. REED: Rhonda Reed, National Marine
23 Fisheries Service.

24 MR. SEARS: Bill Sears, San Francisco.

25 MR. KNAPP: Jonathan Knapp, San Francisco.

1 MR. SHUTES: Chris Shutes, California Sport
2 Fishing Protection Alliance.

3 MR. ETTEMA: Okay. Thank you. And then just
4 one additional item. I believe it was on Friday, myself
5 and some others received an email about a rehearing
6 request regarding a different study.

7 Just to clarify for everyone in the room today,
8 the Panel will not be considering that study. We won't
9 be making any recommendations with regard to that study
10 request.

11 And then just some other things. You know, we
12 can -- there's some people in the next room that are
13 talking somewhat loudly, we can definitely hear them,
14 but if we could all just sort of speak up and just make
15 sure that Carole can hear you for the record.

16 And the first few times that you speak, if you
17 could state your name before you go, that would be
18 great.

19 And now I'll open it up to opening statements.

20 NMFS, would you like to go first?

21 MR. THOMPSON: Larry Thompson, NMFS.

22 Good morning. In preparation of our opening
23 remarks for today's technical conference, NMFS reviewed
24 the regulations pertaining to the study phases of the
25 integrated licensing process. We wanted to better

1 understand the purpose of a study dispute and how it
2 functions. We trust that the FERC lead panelist has
3 also gone over the study dispute rules and regulations
4 with the agency and independent panelists. Obviously,
5 you've done so, and it's a really good introduction, I
6 thought.

7 We did not find anything in the regulations
8 allowing the Commission to determine, prior to a study
9 dispute conference, that a dispute with respect to a
10 study pertaining directly to the exercise of an agency's
11 Federal Power Act Section 18 authority will not be
12 considered by the Panel.

13 So we just want to make the point here today
14 that we came prepared to discuss NMFS' Request No. 3.
15 We understand that Nick has made a determination we will
16 not hear anything about that today. We understand that.
17 We disagree, but we understand.

18 In summary, the regulations that we reviewed
19 guide us on three key aspects of a study dispute.

20 First, we're here today because NMFS disagrees
21 with the Commission's Study Plan Determination that was
22 issued by the Office of Energy Projects on February 2nd,
23 2015, which found that two study requests submitted by
24 NMFS were not required and the licensees have not been
25 ordered by the Commission to conduct them. These were

1 NMFS' Request No. 3, Quantifying Existing Upper Tuolumne
2 River Habitats For Anadromous Fish As They Pertain to
3 Fish Passage Blockage At La Grange Dam, and NMFS'
4 Request No. 4, that we're here to talk about today,
5 Effects of the Project and Related Activities on the
6 Genetic Makeup of Steelhead/Rainbow Trout
7 *Oncorhynchus mykiss* in the Tuolumne River.

8 Accordingly, today we wish to review with the
9 Panel the Commission's Study Plan Determination with
10 respect to NMFS' Request No. 3, which we'll call our
11 "Genetics Study Request" for short.

12 We hope that NMFS staff will provide the Panel
13 its explanation and clarify its rationale for rejecting
14 NMFS' Genetics Study Request.

15 We urge the Panel today to give equal time to
16 questioning both FERC staff and NMFS staff and equal
17 attention to both of the key documents at issue in this
18 study dispute. Those are NMFS' Genetics Study Request
19 and the Commission's Study Plan Determination that
20 denied that request.

21 Second, we're here today because fish-passage
22 license conditions are at issue in the integrated
23 licensing process for this project. The regulations
24 allow NMFS, as a federal agency, to dispute FERC's Study
25 Plan Determination with respect to studies pertaining to

1 fish passage or fishways prescribed under the Federal
2 Power Act.

3 Simply, this dispute has arisen because our
4 agency requested study to inform potential fish-passage
5 license conditions for the La Grange project and OEP
6 staff subsequently determined that NMFS' Genetics Study
7 Request is not required for that purpose. We disagree
8 with this Commission decision and intend to discuss our
9 disagreement today with the Panel.

10 Third, we're here today because the regulations
11 pertaining to the formal study dispute resolution
12 process -- that's in Title 18 of the Code of Federal
13 Regulations, Section 5.14(k) -- provide for a technical
14 conference, quote, for the purpose of clarifying the
15 matters in dispute with reference to the Section 5.9(b)
16 study criteria, unquote.

17 We understand that after this conference the
18 Panel must deliver a finding to the Commission's OEP
19 Director concerning the extent to which each study
20 criteria set forth in Section 5.9(b) is met or not met
21 and why and make recommendations.

22 In NMFS' Genetic Study Request we provided
23 written responses for each of the Section 5.9(b) study
24 criteria. Subsequently, the Commission's Study Plan
25 Determination denied the Genetics Study Request by

1 reference to the Section 5.9(b) study criteria.

2 So again, we urge the Panel to allow time today
3 to review both of the key documents in the study dispute
4 with respect to their treatment of the study criteria,
5 NMFS' Genetics Study Request, and the Commission's Study
6 Plan Determination. In this way, the technical
7 conference can meet its purpose of clarifying the
8 matters in dispute with reference to the Section 5.9(b)
9 study criteria.

10 With these aspects of the study dispute in
11 mind, NMFS is here today to explain to the Panel:

12 First, how the project's 120-foot-high
13 La Grange Dam has blocked fish passage for 120 years,
14 since 1894;

15 How barriers to fish passage disrupt historic
16 patterns of genetic exchange between above-barrier and
17 below-barrier fish populations, including for Central
18 Valley steelhead, *Oncorhynchus mykiss*;

19 How NMFS' Genetics Study Request was submitted
20 to understand the potential adverse effects in the
21 genetic makeup of the above-barrier and below-barrier
22 *O. mykiss* populations resulting from the La Grange Dam
23 acting as a total gene-flow barrier.

24 We should keep in mind that our conventional
25 use of the terminology, quote, upper Tuolumne River and,

1 quote, lower Tuolumne River, unquote, is only because
2 the La Grange Dam separates the upper and lower
3 watershed. It is 120 feet high and has stood for
4 120 years.

5 We will explain today how the results of NMFS'
6 requested study could inform the development of a
7 fish-passage license condition. The results would
8 inform whether or not the fish-passage condition is
9 warranted and should be developed. NMFS has made no
10 decision yet.

11 Second, the results would inform how or when a
12 fish-passage condition should be developed.

13 We'll explain today -- and you'll recognize
14 this as some of the other Section 5.9(b) criteria --
15 we'll explain how the existing information about the
16 genetic effects is not sufficient, how the existing
17 information is not sufficient, how the requested study
18 would apply practices consistent with those accepted in
19 the scientific community, how NMFS considered the level
20 of effort and cost, how the requested study is
21 consistent with NMFS' resource goals and objectives.

22 And lastly, we are reminded that NMFS' Genetics
23 Study Request seeks to understand the effects of the
24 project on the genetic makeup of Central Valley
25 steelhead, a species listed as threatened under the

1 federal Endangered Species Act. Therefore, it is
2 anticipated that the study results would inform future
3 formal ESA -- Endangered Species Act -- consultation
4 between the Commission and NMFS, including issues
5 regarding fish passage.

6 Thank you.

7 MR. ETTEMA: Okay. Thank you.

8 Did anyone else have opening statement?

9 MR. DEVINE: The Districts do.

10 MR. ETTEMA: The Districts? Okay. Thank you.
11 Go ahead.

12 MR. DEVINE: My name's John Devine, with HDR.

13 The Districts appreciate the opportunity to
14 offer some brief opening remarks on the overall content
15 of the technical panel's work.

16 The Districts believe that there are
17 well-defined protocols and policies and underlying court
18 precedents that help define the requirements of 18 CFR
19 5.9(b), which is under discussion today, and who is
20 obligated to acquire the information needed for
21 decision-making in the FERC process.

22 Because of its relevance to this Panel's
23 deliberations, I want to read excerpts directly from a
24 Commission order on rehearing dated July 14th, 2000,
25 dealing with the relicensing of the Curtis Palmer

1 Project, FERC Project No. 2609-014.

2 The Commission order on rehearing deals
3 directly with the question of what entity has the
4 obligation of acquiring information in a FERC licensing
5 proceeding.

6 The Commission order also relates directly to
7 fishery issues and where the responsibility lies for
8 providing information on the record before FERC to
9 support decision-making and development of license
10 conditions.

11 In this order, the federal resource agency
12 involved was the U.S. Fish & Wildlife Service within
13 the Department of Interior. We believe it's equally
14 applicable to all the resource agencies. And I offer
15 two quotes from the order on rehearing.

16 First, and I quote: Under the standards of the
17 Administrative Procedures Act, a decision by the
18 Commission to require an environmental study in a
19 hydropower licensing proceeding must be supported by
20 substantial evidence, end quote.

21 Having thus stated a basic criteria for FERC to
22 require a study, the order then goes on to discuss who
23 is responsible for what studies.

24 I again quote from the order: In addition,
25 Interior appears to be operating -- that is, the

1 Department of Interior in that case -- under the
2 assumption that the Commission is obligated to provide a
3 record to support Interior's decision-making and that
4 we -- that is, the Commission -- must review Interior
5 study requests under a different standard than others.

6 Both of these assumptions are wrong. While we
7 respect the Interior's statutory mission, and while, as
8 we know from the April 27th order, we hope that
9 licensees and other agencies can work together to ensure
10 the necessary studies are performed. It is up to
11 Interior to provide the records to support any fishways
12 it prescribes.

13 Interior's arguments that the Commission must
14 supply information Interior desires has already been
15 rejected by the courts. In the Department of Interior
16 versus FERC, DC Circuit, 1992, Interior argued that the
17 Commission erred in declining to require studies that
18 Interior thought vital to its development of fish and
19 wildlife recommendations under Section -- Federal Power
20 Act Section 10(j).

21 The court stated that, in that case, nothing in
22 the statute requires FERC to conduct studies that the
23 fish and wildlife agencies deem necessary to the
24 Section 10(j) process. The same is true for Section 18.
25 Still within -- this is directly from the order --

1 nothing in the Federal Power Act suggests that the
2 Commission must order studies that Interior desires but
3 which the Commission deems unnecessary to evaluate the
4 public interest. Likewise, nothing in the Federal Power
5 Act indicates that the Commission is required to give
6 particular weight to study requests by Interior, end of
7 quote.

8 The Commission policy, supported by the
9 courts -- this Commission policy, supported by the
10 courts, is directly relevant to NMFS' request that the
11 Districts perform genetic testing of up-river,
12 down-river O. mykiss.

13 FERC was meticulously clear on the scope of the
14 information FERC needs for its La Grange decision-making
15 process related to fish passage. And I refer you to
16 pages B-2 and B-3 of FERC's February 2nd, 2015 Study
17 Plan Determination.

18 And on page B-18 of its determination, FERC
19 states that while the genetics information may be needed
20 by NMFS for its own fishery management decision-making,
21 FERC does not need the information for FERC's
22 development of license conditions.

23 Therefore, if NMFS deems that it needs
24 additional information to support its Section 18
25 decision-making, it is NMFS that is obligated to obtain

1 it.

2 Thank you.

3 MR. ETTEMA: Thank you, John.

4 Jim, did you have anything to open up with?

5 MR. HASTREITER: Yeah. I just want to thank
6 the Panel. Jim Hastreiter with FERC. I appreciate your
7 time. And making a wise decision on the information
8 that's going to be presented here today and providing
9 recommendations to the Director of OEP.

10 I'll just let the record speak for itself. And
11 I appreciate, you know, as -- understanding that our
12 letter of February 27 essentially speaks for itself.

13 Thank you.

14 MR. ETTEMA: Okay. Thank you.

15 So we have a list of Panel questions that I've
16 circulated via email to the participants prior to this
17 meeting. I believe last Wednesday I sent that out. And
18 we're going to get to that. But I was hoping just to
19 quickly go over some background about the project,
20 including the degree to which the upstream Don Pedro
21 Project sort of affects operations at La Grange.

22 So we've already heard that the La Grange Dam
23 has been there for 120 years, and it's 120 feet high,
24 but I'm interested in just sort of, you know, the basic
25 day-to-day operations. I don't know if -- John, do you

1 have a quick run-through that you could -- that you
2 could do, like how the project is operated? Or I could
3 just ask some specific questions, too.

4 MR. DEVINE: Well, that might be best.

5 John Devine with HDR.

6 I think the best source of information is the
7 preapplication document for La Grange. I'd be happy to
8 go through some of the parts of that to describe the
9 project. And it also describes the other project
10 operations. So is that what you're looking for?

11 MR. ETTEMA: Well, I was just curious on, you
12 know, if we could, you know, throw out some general --
13 some general numbers. Like, I was curious about things
14 like reservoir depth at La Grange and Don Pedro and how
15 deep the intake is and that kind of thing. I haven't
16 gotten a chance -- we haven't gotten a chance to review
17 the PAD entirely just yet, but -- I don't know if --

18 MR. DEVINE: I can certainly provide that
19 information. I can't do it off the top of my head, but
20 if you refer to the PAD in terms of depth of structures
21 and things like that, they are provided in the PAD.

22 In a basic way, if you think of it, Don Pedro
23 stores water and La Grange diverts water for irrigation
24 and municipal and industrial use. So that's -- I mean,
25 that's the basic project operation.

1 Don Pedro draws down during the irrigation
2 season and into the fall and then fills with spring
3 flows, and that water is subsequently discharged from
4 Don Pedro and diverted at La Grange Dam to meet the
5 Districts' needs.

6 MR. ETTEMA: Okay. And La Grange was
7 originally -- that was built for irrigation purposes,
8 but then hydro was later added?

9 MR. DEVINE: Yes. It was built in between --
10 La Grange was built between 1891 and 1893. Hydro was --
11 and the purpose of La Grange Dam was basically to raise
12 the water level in the Tuolumne River to allow the
13 diversion of water at the La Grange Dam by gravity means
14 to the Districts' irrigation systems.

15 In 1923, the TID -- and TID -- let me --
16 La Grange Dam is owned jointly by the Modesto Irrigation
17 District and the Turlock Irrigation District. Modesto
18 Irrigation District's facilities are on the north side
19 or right side of the river looking downstream; Turlock
20 Irrigation District's facilities and area served are on
21 the south side of the river or left side looking
22 downstream.

23 The intake to TID's canal system is built into
24 the reservoir at La Grange Dam on the south side of the
25 river and MID's intake to its irrigation system is

1 built, of course, on the right side, at the -- right
2 near the La Grange diversion dam, just inside the
3 reservoir.

4 So TID, in 1923, added the powerhouse, which is
5 the approximately 4 and a half- to 5-megawatt powerhouse
6 that exists there now, fed by two penstocks that
7 discharge from the canal where TID's water supply is
8 delivered to the irrigation -- to its irrigation system.

9 MR. ETTEMA: Okay. So water first enters the
10 canal for Turlock Irrigation District and then goes to
11 the powerhouse?

12 MR. DEVINE: Yeah. So there's a tunnel in the
13 rock at La Grange diversion dam, and that tunnel is
14 about 600 feet long, and it -- that discharges water
15 into a forebay area, and the forebay area contains the
16 two penstock -- the intake to the two penstocks, and
17 it's the headworks for the TID canal, main canal.

18 MR. ETTEMA: Okay. And the irrigation
19 diversions aren't -- they're not included in the
20 project; right, Jim? Or John?

21 MR. HASTREITER: So the facilities for the side
22 of the river that feeds the powerhouse --

23 MR. ETTEMA: That part would be.

24 MR. HASTREITER: -- are included.

25 MR. ETTEMA: Okay. What about -- what do we

1 know -- I assume there's no dispute about fish passing
2 upstream of La Grange. That is the furthest that fish
3 can go is La Grange Dam. What do we know about
4 downstream passage of fish? Is there any other -- is
5 there any existing information about passage from
6 Don Pedro down or from La Grange down? Do we have
7 anything like that on record, either from studies for
8 the Don Pedro Project or ongoing or other proposed
9 studies for La Grange?

10 MR. DEVINE: Just a comment on the upstream
11 passage. We have proposed and FERC has ordered or
12 agreed to the Districts conducting a study that actually
13 tries to measure the actual number of fish that approach
14 the La Grange diversion dam, either steelhead or
15 resident fish or fall-run Chinook. So while the
16 130-foot-high dam certainly may appear to be a blockage,
17 the actual extent to which it is is unknown.

18 MR. ETTEMA: Okay.

19 MR. DEVINE: With respect to downstream
20 passage, there's very little information in the record
21 about downstream fish movement.

22 MR. ETTEMA: Okay.

23 MR. THOMPSON: Can I weigh in real quick? I
24 think you just asked a question about is La Grange Dam a
25 blockage to fish passage. And I think what I heard the

1 answer was, the actual number of fish that approach the
2 dam is unknown, but I didn't hear an answer about
3 whether or not the Districts feel La Grange Dam, at
4 120 feet high, has blocked fish passage for 120 years.
5 Did you even get -- just a question: Did you get an
6 answer?

7 MR. ETTEMA: Well, I mean, my interpretation,
8 just from going through the record, is that -- I mean,
9 the dam is there. As far as I can tell, there's no
10 species migrating upstream. If that is a contentious
11 issue that I'm getting into, then I'll just leave it at
12 that. You know, we don't have to have that discussion.

13 MR. THOMPSON: I don't think it's contentious,
14 but you didn't get the answer, but I -- I think you're
15 correct. I think it's obvious.

16 MR. ETTEMA: Yeah. I'm more interested in the
17 down- -- what we knew about the downstream passage,
18 really.

19 MR. THOMPSON: And on that issue, what was the
20 answer?

21 MR. ETTEMA: If there was -- I was wondering if
22 there was any existing information, any other studies
23 that have been done to this date, because -- and I ask
24 that because, NMFS, in your filing you've indicated that
25 there may be a complete blockage of downstream fish

1 migration, and I was just wondering if we have any -- if
2 there's actually any evidence to support that or if
3 there's just no --

4 MR. THOMPSON: No, Nick, I'm completely
5 agreeing with your question. I didn't hear an answer of
6 the question. But I completely agree, we did not rule
7 it out, because we think there are likely O. mykiss
8 living in La Grange reservoir above the dam. They could
9 come over during spill. Water flows over the crest of
10 the dam certain times of the year. There are several
11 other ways that water passes. There are several
12 conduits -- I want to say four or five ways that fish
13 can get over La Grange -- or water can go over La Grange
14 Dam through the powerhouse, and there's a possibility of
15 some survival there, and there's water that spills
16 down -- help me out, John -- I forget all the
17 conduits -- but there are several areas.

18 So I think it's a good -- it's a good question,
19 but we didn't rule it out is what I'm pointing out. I
20 was curious to hear, is there -- is there any
21 information about downstream passage that John or Jim
22 know about?

23 MR. DEVINE: I think I answered that, but just
24 to go back a little bit more and then I'll try it again.
25 There was a study under the Don Pedro Project of fish

1 populations in La Grange pool and they found that there
2 are two populations, the rainbow trout population,
3 O. mykiss population, and golden population.

4 And we wouldn't disagree at all that under high
5 flows there's a possibility that some of those fish of
6 both species could flow over the dam. There are no --

7 MR. ETTEMA: At La Grange?

8 MR. DEVINE: At La Grange Dam. But there are
9 no studies. You asked if there were studies --

10 MR. ETTEMA: Okay.

11 MR. DEVINE: -- of that, and we don't have any
12 specific studies of that.

13 MR. HASTREITER: So do you understand the setup
14 of the dam itself? It acts as a spillway.

15 MR. ETTEMA: Yes. Yeah, yeah, yeah. I think
16 I've got that. But, yeah, just curious on the
17 downstream fish passage.

18 Are the intakes to the diversions, are those
19 screening for fish at all or . . .

20 MR. DEVINE: No.

21 MR. ETTEMA: No. Okay. What about at
22 Don Pedro? Are the intakes to the turbines, are they
23 screened or . . .

24 MR. DEVINE: The intakes to the -- the normal
25 maximum water level at Don Pedro is 830 feet.

1 MR. ETTEMA: Oh.

2 MR. DEVINE: The power intake is at elevation
3 535 feet.

4 MR. ETTEMA: Okay.

5 MR. DEVINE: And the diversion intake, which is
6 the old diversion tunnel, which can also act as a
7 location to release flows, is at elevation 320.

8 MR. ETTEMA: Okay.

9 MR. DEVINE: So they're considerably below the
10 normal maximum water surface. But again, there's no --
11 there's been no studies conducted, to my knowledge, of
12 downstream passage through those facilities.

13 MR. ETTEMA: Okay.

14 MR. HASTREITER: That's my understanding as
15 well.

16 MR. ETTEMA: All right. So at the end of the
17 summer, when the reservoir's drawn down, how far --
18 like, how far down --

19 MR. DEVINE: That varies every year, depending
20 on inflows and demands. This is the fourth year of
21 drought, as you know, and it's very low at this point,
22 but it can vary. Historically, over the last 40 years
23 it's varied anywhere from -- this is from memory now --
24 so something like elevation 700 to 790, 780, and it can
25 be lower.

1 MR. ETTEMA: Okay.

2 MR. CRAVEN: I had a question, Nick.

3 MR. ETTEMA: Richard.

4 MR. CRAVEN: How is actually La Grange
5 operated? Is it sort of a run-of-the-river type
6 project? In other words, the water comes down and you
7 have no control over it in terms of what flow comes to
8 the system? Your system? In other words --

9 MR. DEVINE: Don Pedro releases the water.

10 MR. CRAVEN: Yeah. But, I mean, do you ask for
11 releases or is it just --

12 MR. DEVINE: The "you" being as the Districts
13 have, during irrigation season, will identify what the
14 release requirements are for irrigation and M&I use,
15 municipal and industrial use. I know FERC required
16 minimum flows of the Don Pedro Project, and those are
17 added to the estimate -- the estimated amounts of
18 release of irrigation and M&I water.

19 MR. CRAVEN: Okay.

20 MR. AMBROSE: Can I ask a question?

21 MR. ETTEMA: Sure.

22 MR. AMBROSE: Are there minimum flow releases
23 downstream of La Grange to maintain certain cfs
24 downstream?

25 MR. DEVINE: The minimum flow requirements of

1 the Don Pedro Project require flows -- the minimum flows
2 to be measured at a point downstream of La Grange Dam.

3 MR. AMBROSE: Thank you.

4 MR. HASTREITER: USGS gauge.

5 MR. DEVINE: Yeah.

6 MR. HASTREITER: About a mile.

7 MR. DEVINE: About a mile downstream of
8 La Grange diversion dam, as a measuring point for
9 Don Pedro license minimum flow requirements.

10 MR. ETTEMA: Okay.

11 MR. WOOSTER: Nick, if I could clarify one
12 thing on your downstream passage question?

13 MR. ETTEMA: Mm-hmm.

14 MR. WOOSTER: I'm not sure if it's clear. At
15 Don Pedro, basically the only way fish could go
16 downstream by entering the turbine intake a couple
17 hundred feet below the water surface and survive going
18 through the turbine there, that there's not a spillway
19 or other conduit that's used that often. There's one
20 spillway of the project that I believe was only operated
21 in the '97 flood. So while fish could wash over
22 La Grange, there's not that opportunity at Don Pedro.
23 And to my knowledge, there's not been a study of any
24 kind of survivability through the turbines.

25 MR. ETTEMA: Okay. I've got a couple questions

1 for NMFS as well, just sort of background information on
2 O. mykiss. And certainly the Districts might have some
3 information on this as well. But I was wondering, you
4 know, just what the current status is of the O. mykiss
5 population, whatever you have above and below the dams,
6 size of the populations, hatchery and stocking practices
7 above and below the dams, things of that nature. So do
8 you have -- what is the current -- what do we know about
9 the population, let's say, let's start downstream of the
10 dam.

11 MR. THOMPSON: I'll start. Downstream of the
12 dam, there are about -- there are 30 years or so of
13 snorkeling census data that I have reviewed, and they
14 indicate that the overall O. mykiss population
15 downstream of La Grange Dam is low.

16 You could -- I will refer the Panel to the
17 Turlock and Modesto Irrigation annual report, annual
18 snorkeling report. I'm thinking the last year -- Steve,
19 maybe you can help me -- I think the last year might
20 have been reported in 2014. And this is -- so you'll
21 see a long-term record.

22 In the back end of that report you'll see a
23 couple of important figures and tables. One is a table
24 that shows that snorkeling census data since the
25 beginning of their technique and their method until last

1 year, and you'll also see a figure that indicates the
2 distribution.

3 And I'll just tell you that their overall theme
4 is that the numbers of fish are very crowded up near the
5 dam, in the first mile or so.

6 There were at least seven years when there were
7 no O. mykiss whatsoever observed in the year snorkeling,
8 and there were other years when there were -- I would
9 say equivalent number of years when there were probably
10 less than ten total fish observed.

11 MR. ETTEMA: And do the surveys -- do they
12 occur at a time when the -- any anadromous forms would
13 be in the river as well?

14 MR. THOMPSON: Mostly those surveys occur in
15 the spring and some were in the summer and then some
16 were in the fall, so they vary.

17 MR. ETTEMA: Okay.

18 MR. THOMPSON: The times. Sometimes it depends
19 on water year type. Sometimes they had flows they
20 deemed were too high still in June to snorkel; other
21 years, not.

22 So that's one thing we know is that the overall
23 population of O. mykiss is low. If the overall
24 population of O. mykiss is low, the anadromous
25 population, which is a subset of the total population,

1 is likely to be low.

2 MR. ETTEMA: Okay.

3 MR. DEVINE: Could I comment on that?

4 MR. THOMPSON: Now, we know also that a -- we
5 know that -- we know that some of those O. mykiss are
6 anadromous O. mykiss. There was a study performed by
7 Zimmerman, et al., published in 2009. We can provide
8 that for you. It's in the licensing record. And some
9 of the offspring were sacrificed, and their ear bones,
10 their otoliths were analyzed. They did have the --
11 anadromy was detected in some of those fish. So we know
12 that there are steelhead.

13 There's also a monitoring weir on the lower
14 river which has the ability to detect upstream migrating
15 adults, and they have been detected. Large O. mykiss
16 have migrated upstream over that. We presume they're
17 steelhead because they're over 20 inches long, very
18 large fish, and -- but the numbers are also low. So
19 that's the down -- that's the downstream condition.

20 MR. ETTEMA: Okay. Can I stop you right there?

21 John, you wanted to comment?

22 MR. DEVINE: Please. First, I would encourage
23 you to look actually at the record and not the summary
24 provided here.

25 I think I would ask Larry first, those seven

1 years, when were those seven years that there were zero
2 0. mykiss?

3 MR. THOMPSON: I'd have to pull up the report
4 and look. But there were --

5 MR. DEVINE: I think it's important to
6 recognize that in 1996 a settlement agreement was
7 reached among the parties about flows in the lower
8 Tuolumne River and that the settlement agreement
9 involved release from Don Pedro of new and higher flows
10 downstream to the lower Tuolumne River, especially
11 summer flows.

12 The summer minimum flows prior to the 1995
13 settlement agreement, '96 settlement agreement, which
14 went into full -- the first full year of implementation
15 was 1997. The prior -- prior to that, the minimum flow
16 requirement in the summer was 3 cfs. Three.

17 Over the last, oh, several years, but since the
18 settlement agreement, the over-summer flows have been
19 considerably higher than that, as required by the new
20 license term associated with the settlement agreement
21 and voluntarily increased above even the minimums
22 whereby the Districts, in conjunction with the City and
23 County of San Francisco, to a higher flow than the
24 minimums required by that settlement agreement.

25 So I think you'll find from the record, if you

1 look in the record -- I would encourage you to look at
2 the record -- it's quite thorough -- that the O. mykiss
3 population has been increasing since that '96 settlement
4 agreement.

5 And the years, I think, that you'll find zero
6 relate to years that -- well, I would encourage you to
7 look at the record itself.

8 MR. ETTEMA: Okay.

9 MR. CRAVEN: You're suggesting the zero fish
10 was prior to the '97 agreement?

11 MR. DEVINE: That's why I asked for the
12 information. My recollection was that it -- but I don't
13 want to yield to my recollection. I really encourage
14 you to look at the record itself.

15 MR. ETTEMA: Okay.

16 MR. DEVINE: But the -- but since the '96
17 settlement agreement, the O. mykiss population in the
18 lower Tuolumne River has increased.

19 MR. THOMPSON: I'd like to respond that John is
20 correct that those zero years -- I'm looking at the
21 report now -- I found it -- they're in dry years, you
22 know, years like 1987, '88. But in 2000 -- I'm looking
23 at the total number of O. mykiss -- was 31 in the lower
24 Tuolumne River. In 2002, it was 28. In 2003, 101. So
25 these are very low numbers.

1 MR. DEVINE: Is that the population estimate or
2 is that the number of observations?

3 MR. THOMPSON: Number of observations.

4 MR. DEVINE: That's not the population
5 estimate.

6 MR. ETTEMA: And we will -- you know, if we
7 need to, we will dig out the report and just look at the
8 report for ourselves.

9 MR. DEVINE: And one more question.

10 MR. THOMPSON: For clarification, that was -- I
11 think I said it was 2014. I'm sorry. The report that I
12 was able to find, the last one, excuse me, is March
13 2014, but I think it contains the 2013 data. And it is
14 just entitled the "2013 Lower Tuolumne River Annual
15 Report, 2013 Snorkel Report and Summary Update Report
16 2013-5."

17 MR. ETTEMA: Okay.

18 MR. THOMPSON: Thank you.

19 MR. ETTEMA: Thanks.

20 MR. DEVINE: All of those are summarized in the
21 Don Pedro license application in terms of the estimates,
22 snorkeling results and the population estimate.

23 MR. ETTEMA: Okay.

24 MR. DEVINE: Just one other question: How many
25 of the fish in the weir -- the O. mykiss in the weir --

1 have been over 20 inches?

2 MR. THOMPSON: I don't know. I'm sorry.

3 MR. DEVINE: I would ask you to look at the
4 record. My recollection is maybe two in the years since
5 the weir has been in. But please look at the record.

6 MR. ETTEMA: Okay. Yeah. We'll look at that.

7 Let's move on to -- I had a question about
8 hatchery and stocking practices. Let's just stick with
9 below the dam for right now. Is there any stocking that
10 occurs either by NMFS or Cal Fish and Wildlife below the
11 dam in the Tuolumne River or the adjacent rivers? And
12 is there -- are they a hatchery strain? Are they a wild
13 strain that's cultivated in a hatchery? Could you
14 explain? What does NMFS know about that at this time?

15 MR. THOMPSON: I think there is stocking in the
16 drainages. I'm not really up on that, you know, in any
17 detail. But in the lit sources that the Panel asked for
18 there is a figure that I'll just hold up. I think it's
19 the second-to-the-last page in the Pearse and Garza
20 report. And it groups the different fish genetically
21 speaking. And this is Figure 5-A in Garza and Pearse
22 2008. And you can see that this circle -- one of these
23 circles shows the hatchery fish. And so, see how they
24 group differently from this other circle, which is the
25 above and below populations? All above and below

1 populations are over here (indicating). So I think --

2 MR. ETTEMA: That's for the Tuolumne River
3 only?

4 MR. THOMPSON: This is for the entire
5 watershed, all of the watersheds taken together.

6 MR. ETTEMA: Okay.

7 MR. THOMPSON: This is Central Valley
8 watersheds.

9 But I think we can answer your question, Nick,
10 if we did the study, if we had the study results, so we
11 could -- we could answer the question about hatchery
12 introgression in those downstream populations and those
13 upstream populations.

14 MR. ETTEMA: Okay.

15 MR. THOMPSON: John wanted to --

16 MR. WOOSTER: Yeah. Nick, Tuolumne River
17 itself does not have an active hatchery. There's -- a
18 couple drainages to the north is the Mokelumne River.
19 Above Mokelumne River there's a hatchery that raises
20 O. mykiss. We suspect that there could be strays from
21 that hatchery into the Tuolumne.

22 The drainage to the south, Merced has a
23 hatchery, but it's a Chinook hatchery. There is a trout
24 farm on that river as well.

25 MR. ETTEMA: Okay.

1 MR. WOOSTER: But as far as I know, they're
2 raising fish for planting in lakes. So there's not a
3 hatchery currently on the Tuolumne River itself.

4 MR. DEVINE: Can I comment on that?

5 MR. ETTEMA: Sure.

6 MR. DEVINE: CDFW does have a hatchery on the
7 upper end of Don Pedro Reservoir. That's just below
8 San Francisco's Moccasin facility. And they have a
9 large hatchery there, and I believe part of that
10 hatchery is O. mykiss that enters the plant in Don Pedro
11 Reservoir.

12 MR. WOOSTER: Yes. John's right. There's a
13 hatchery for reservoir fish.

14 MR. ETTEMA: Okay.

15 MR. WOOSTER: I was thinking about the lower
16 river.

17 MR. ETTEMA: You were. We were. But I was
18 going to come back to upper parts -- the upper part as
19 well.

20 All right. One more thing before -- well, I
21 might open it up to the other panelists, see if they
22 have any other questions. But any other -- what are
23 some of the threats in the downstream population and are
24 there introduced species, predators? Are there water
25 quality issues, problems with harvest, that kind of

1 thing, with *O. mykiss*? What are some of the more
2 pertinent threats?

3 MR. WOOSTER: To the predator comment, yes.
4 Native and nonnative predators are prevalent in the
5 lower Tuolumne River. Water temperatures, water flows
6 are major limiting factors for *O. mykiss*.

7 MR. THOMPSON: Yes. I would just add that the
8 State Water Board has declared or designated the lower
9 Tuolumne as an impaired water body. It's on the Clean
10 Water Act 303-D list for temperature impairment. And
11 that temperature impairment is due to the loss of the
12 beneficial uses for anadromous fish in the lower
13 Tuolumne. And that is a major issue. And I would agree
14 with what John said about the -- there's a high
15 population, it appears, of predators in the lower
16 Tuolumne River.

17 MR. HOLLEY: If I could just add? In addition
18 to the flow and temperature issues, our recovery plan
19 also identified a couple other stressors in the lower
20 Tuolumne, which include the loss of riparian habitat and
21 instream cover, loss of natural river morphology and
22 function, loss of flood plain habitat, entrainment, and
23 predation, and potentially hatchery effects as well.

24 MR. ETTEMA: Okay. Thank you.

25 MR. DEVINE: I might add to that, if I could.

1 MR. ETTEMA: Sure. Real quick.

2 MR. DEVINE: First, we're not aware of any
3 limiting factor analysis that has been done. There is
4 an O. mykiss population model that has been developed as
5 part of the Don Pedro relicensing and gone through a
6 consultation program with relicensing participants.
7 That does not -- I have not identified through that
8 model that temperature is a limiting factor, or water
9 flows. It doesn't try to identify specific limiting
10 factors, per se. But, for example, the study done on
11 Don Pedro, required by FERC in the Don Pedro licensing
12 proceeding, to do with spawning habitat, has estimated
13 the total spawning habitat and population potential of
14 the lower Tuolumne River is over -- is in hundreds of
15 thousands of fish. And I would refer you to that study.

16 So there is considerable information in the
17 record on Don Pedro on lower Tuolumne River O. mykiss
18 and including a population model that has been completed
19 and filed with FERC.

20 MR. ETTEMA: Okay. Thank you.

21 We're kind of dragging on with some of that
22 background information, so I think it's time we should
23 jump into the main questions that the Panel circulated.

24 Jon, do you want to go ahead --

25 MR. AMBROSE: Sure.

1 MR. ETTEMA: -- and kick us off with this
2 section?

3 MR. AMBROSE: So you'll find that the Panel
4 came up with a series of six questions. Those questions
5 are in back. The questions relate to the study
6 criteria. And Question 1 and 2 relate to study criteria
7 No. 5. Number 5 is: Explain any nexus between project
8 operations and effects, direct, indirect, and/or
9 cumulative, on the resource to be studied and how the
10 study results would inform the development of license
11 requirements.

12 Question No. 3 relates to Study Criteria No. 4.
13 Number 4 says: Describe existing information concerning
14 the subject of the study proposal and the need for
15 additional information.

16 Panel Question 4 and 5 relate to Study Request
17 No. 6. Number 6 says: Explain how any proposed study
18 method -- it says "methodology" -- including any
19 preferred data collection and analysis techniques or
20 objectively quantified information and a schedule
21 including appropriate filed seasons and the duration is
22 consistent with generally accepted practices in the
23 scientific community, or, as appropriate, considers
24 relevant tribal values and knowledge.

25 And then our last question, No. 6, relates to

1 Study Criteria No. 7. Number 7 says: Describe
2 considerations of level of effort and cost as applicable
3 and why any proposed alternative studies would not be
4 sufficient to meet the stated information needs.

5 So these will be the starting focus of the
6 Panel's questions.

7 And I ask that we all speak -- we've done a
8 good job, I think, so far. We've been respectful.
9 We've spoken clearly. One thing I have noticed is that
10 we're not always saying our names and where we're from,
11 and I'm feeling for the court reporter, so if we can
12 make sure that we do that for her benefit.

13 MR. ETTEMA: You want to start with the
14 first --

15 MR. AMBROSE: Sure. And this one -- this is
16 for NMFS. If you could explain the nexus or lack
17 thereof between project operations and effect on the
18 resources to be studied, how would the study results
19 inform the development of license conditions? Please
20 provide specific examples of potential license
21 conditions.

22 MR. THOMPSON: Thank you, Jon.

23 Larry Thompson, NMFS.

24 This question, you are correct, is directly
25 related to Section 5.9(b)(5) criteria.

1 And if I can call your attention to page 52 of
2 our -- of NMFS' Study Request, Genetics Study Request,
3 filed July 22nd, 2014 -- I'll give you a moment to go to
4 that page. On page 52, and then the top of page 53, we
5 explain in writing the nexus between the project
6 operations and the effects on the resource to be
7 studied, and then, secondly, how the study results would
8 inform the development of license conditions.

9 So, as I said in my opening remarks, La Grange
10 Dam is a total blockage to upstream fish passage. We
11 discussed downstream fish passage. I think it's fair to
12 say it does not represent a safe or effective downstream
13 fishway.

14 Even if it's possible for some *O. mykiss* to
15 pass downstream, NMFS would not likely consider that an
16 effective, efficient downstream fishway.

17 Therefore, La Grange Dam has blocked, as I said
18 in my opening remarks, totally blocked the gene flow
19 between the *O. mykiss* population in the lower Tuolumne
20 and that in the upper Tuolumne.

21 So, what we're explaining here is the nexus or
22 connection between the project, La Grange Dam, and its
23 blockage effects and the resource to be studied, which
24 is *O. mykiss*. The federally listed species is the
25 steelhead form of *O. mykiss*.

1 So I hope -- let me elaborate a little bit
2 about that. We pointed out that barriers to migration
3 and anadromy disrupt these historic patterns of genetic
4 exchange between the two populations. What we're trying
5 to do through the study is understand the genetic
6 condition, understand what the consequences are of that
7 blocked gene flow between those two populations. That's
8 a project effect, clearly, and we want to know what the
9 effect is.

10 Now, how does that -- how would the results
11 inform license conditions? Fish passage is a license
12 condition, would be a license condition. If NMFS
13 decides to prescribe fish passage under our authorities
14 under the Federal Power Act, we would contemplate mixing
15 these two populations, passing fish that have been
16 separated for 120 years between downstream and upstream
17 and back and forth.

18 So what are the consequences of that? Well, in
19 the lit sources that we provided you, you'll see a paper
20 by Meek, et al., entitled "Genetic Considerations for
21 Sourcing Steelhead Reintroduction: Investigating
22 Possibilities for the San Joaquin River."

23 We cited this paper because this paper clearly
24 identified that there are genetic considerations that
25 are involved in putting fish from a downstream area and

1 mixing two populations that have not mixed for
2 120 years.

3 In this case they use the San Joaquin example.
4 We ask the Panel to take a look at this, because there
5 are consequences and considerations that would -- that
6 NMFS would take into account when we put together a
7 fish-passage license condition.

8 So, in other words, first of all, would we --
9 would we do it at all? Are there adverse consequences?
10 We think there are adverse genetic consequences. We
11 think we will have. We're not sure. So this study
12 would inform that decision. First of all, just whether
13 to do it or not. We want to be clear: We have not --
14 as I said in my opening remarks, we have not yet made a
15 decision.

16 MR. ETTEMA: Okay.

17 MR. THOMPSON: And then, secondly, how or when
18 we would do that.

19 MR. ETTEMA: Can I --

20 MR. THOMPSON: Sure. I'll stop.

21 MR. ETTEMA: You said one thing that interested
22 me. You said that you think that there may be an
23 adverse effect by putting in a fishway. Why would there
24 be an adverse effect? Or why do you think there would
25 be an adverse effect?

1 MR. THOMPSON: Well, first of all, if the
2 downstream condition of the -- if the condition of the
3 O. mykiss in the downstream lower Tuolumne indicates
4 inbreeding and low genetic diversity, it may not be
5 warranted or advisable to pass those fish into an upper
6 population, at least initially. It may be that the
7 population downstream needs to be improved.

8 John is correct that the number of what we
9 think are steelhead -- John Devine -- is low in coming
10 to the lower Tuolumne River. John Wooster pointed out
11 that they could be strays.

12 The genetic information, the study from the
13 genetic -- the results of the study we're asking for
14 would indicate a lot of these things. They would tell
15 us the condition of the steelhead in the lower river.
16 Are they strays? Are they native? Are they inbred? Do
17 they exhibit low diversity?

18 Similarly, the information in the upper
19 population, upstream population, would indicate similar:
20 Is the -- are they hatchery fish? Are they native
21 Tuolumne fish? Would mixing the populations result in a
22 better population or not? Are there steps we need to
23 take prior to putting forward a fish-passage condition?

24 MR. AMBROSE: So, Larry, what I'm hearing you
25 say -- and this isn't something that I was able to find

1 in NMFS' record -- is that there are potential
2 consequences to prescribing a fishway that could have --
3 I think we think many times that these are -- this will
4 have a solely beneficial effect to the fishery
5 population, but what I'm hearing you say is that there
6 is the potential for adverse consequences to the
7 population either up or below and that genetic
8 information could potentially affect whether or not NMFS
9 prescribes a fishway or not.

10 MR. THOMPSON: That's correct. That's right.

11 And rather than just point you towards a
12 literature source, let me be a little more specific. I
13 would suggest that you look at page 16 of the
14 Meek, et al., paper and look in the upper left-hand
15 corner of that page. You'll see they use the
16 San Joaquin as a decision-making example.

17 And there are five bullet items that they
18 recommend that the genetic -- that one understand about
19 the genetic status of steelhead before you do this. And
20 I can read them:

21 You need to look at the genetic diversity and
22 the effective population size, the levels of inbreeding,
23 the degree of introgression from hatchery or outside --
24 stock outside the distinct population segment, which is
25 the listed entity for steelhead. Are they locally

1 adapted from within the drainage or out toward at least
2 from within the DPS? Is there evidence for anadromy?
3 And do you have a census population saying its size?

4 So you can take a look at it and go into all
5 the details here today, but does that -- I mean, now,
6 you asked, Jon, about Question 1, explaining the nexus.
7 You know, I directed you to our study request, but I
8 want to contrast, if I could, what we provided here with
9 the FERC Study Plan Determination. So before I close on
10 No. 1, could we please just take a look at the
11 February 2nd, 2015, Study Plan Determination for the
12 La Grange project?

13 This is -- we'll start right at the first page.
14 On the first page I just wanted to direct you to the
15 very first paragraph, which it says: "This
16 determination is based on the study criteria set forth
17 in Section 5.9(b)." That's correct. We agree with
18 that.

19 On page 2, about the middle of the page: The
20 reasons for not adopting the proposed study plans are
21 discussed in Appendix B.

22 So they're telling us, you, with respect to
23 5.9(b), we're going to explain the reasons for not
24 adopting the proposed study plan.

25 Then, if you could turn to Appendix B,

1 page 18 --

2 MR. CRAVEN: That's on the FERC document?

3 MR. AMBROSE: Yes.

4 MR. WOOSTER: Do you want a copy, Richard?

5 MR. CRAVEN: No. I have it here somewhere.

6 I've got a copy. February 2nd.

7 MR. THOMPSON: We're on page B-18, Richard.

8 And if I could just read it, because it's roughly 50 or
9 60 words. This is the rationale given for -- FERC's
10 rationale for not accepting the study we're talking
11 about today. And so it lays out the issues.

12 The purpose of the technical conference is to
13 clarify the issues under dispute. So that's why I'd
14 like to read it.

15 "The Study Plan Determination for the Don Pedro
16 Project, FERC No. 2299, did not require similar genetic
17 studies of Tuolumne River O. mykiss and Chinook salmon,
18 because, while such a research effort may be needed to
19 make fishery management and reintroduction decisions, it
20 will not inform the development of licensing
21 requirements."

22 And then there's a citation here to
23 Section 5.9(b)(5), which is the -- we call it the nexus
24 criteria: "We, therefore, do not recommend that the
25 Districts conduct this study."

1 So I guess I would ask the Panel, I think I
2 explained the nexus between the project effect, the
3 resource to be studied, and I explained how the results
4 of the study would be used to develop a license
5 condition. I would ask that you contrast our rationale
6 with what was provided here and potentially have Jim --

7 MR. ETTEMA: Okay.

8 MR. THOMPSON: -- reflect on that.

9 MR. ETTEMA: Just really quickly, I want to
10 say, so the licensing condition, the potential license
11 condition that NMFS is most focused on is whether or not
12 you will exercise your authority to prescribe a fishway
13 and then perhaps the timing of the fishway as well.
14 Those are the two ways in which this study could
15 potentially influence the licensing condition of fishway
16 prescription.

17 MR. THOMPSON: Well, I would say it's a bit
18 more broad than that, Nick. But the regulations say we
19 can only dispute. We can only be here today, as I said
20 in my opening remarks, with respect to our mandatory
21 conditioning authority.

22 So I believe that the study results will be
23 more useful than just to inform a fish-passage
24 condition, but that is the primary reason we are
25 explaining here today, because the regulations restrict

1 us to that.

2 MR. ETTEMA: Okay.

3 MR. THOMPSON: But, you are -- it's the whether
4 we would do a fish-passage condition, how we would do
5 it, and when we would do it. It's really those.

6 MR. ETTEMA: Okay. I'm going to stop you right
7 there.

8 Jim, do you want to respond?

9 MR. HASTREITER: Sure. Yeah. I'd be glad to.

10 So, you know, we're not disagreeing that
11 La Grange blocks fish. I understand where the Districts
12 are coming from and their argument, which was roundly
13 discussed and leading up to the Study Plan
14 Determination. The Districts' point is that if fish
15 aren't moving up towards the dam, or there aren't many,
16 there's really not a blockage. That's sort of their
17 argument. It's based on the timing of the fish, how
18 many fish. But it's clear dams block fish. Dams in the
19 river block fish. So we're not disagreeing about that
20 at all.

21 You know, I'm glad Larry pointed to our
22 determination on this study. Clearly, our decision was
23 based on that it would inform a license requirement
24 condition. And we have a long history in dealing with
25 genetics issues at the Commission. And, you know, I

1 went through a search probably in the past 20 years of
2 when genetics studies came up, and I think there were
3 two others in California, on the Tuolumne -- or not
4 Tuolumne -- where is that? I'm not going to be able to
5 find it probably. I will look for it a little bit
6 later.

7 MR. ETTEMA: Okay.

8 MR. HASTREITER: I'm not sure where I put that
9 citation. But there were, I think, two other projects
10 where the Commission turned down genetics studies,
11 again, that the Commission looks at genetics studies,
12 principally they're a research effort, which we say
13 here, and that essentially a research effort like that
14 really does inform a license condition.

15 So, to expand on that a little bit, so the
16 Panel understands what we mean by that, it's sort of a
17 sequencing of NMFS' decision here, so their first
18 decision is, they need to decide, are they going to
19 introduce or reintroduce fish into the upper basin.
20 That's their decision and their decision alone. Okay?

21 This study that they're asking on genetics is
22 clearly related to that decision that NMFS needs to
23 make. And I don't think they will dispute that, first
24 of all, that's their decision and that information is
25 necessary for them to make their decision.

1 The results of that sort of study, you know,
2 Larry explained what they would use it for, but
3 basically it's to help build a genetic database and to
4 allow NMFS to have information on making a decision on
5 the stock selection. Okay?

6 If they decide, you know, we want to introduce
7 fish, for whatever reason, they may, under Section 18,
8 require prescribed fish passage.

9 So, you know, I'm not real sure the details of
10 their thinking, if they're just going to think, okay,
11 the fish there in the river then will be moved upstream,
12 or, if they're going to select another stock from a
13 hatchery or an adjacent basin or something; but
14 ultimately, it's clear to us that this genetics study is
15 going to inform their decision to fish, O. mykiss, to
16 the upper Tuolumne or not.

17 It could lead to a Section 18 prescription.
18 Maybe, maybe not. We don't need that information. They
19 need that information to make their decision on
20 reintroduction.

21 So that's the basis of our argument.

22 MR. ETTEMA: Okay. Did the Districts -- did
23 you have something, John?

24 MR. DEVINE: Well, I'd only go back to that
25 sort of opening remarks that we made and reference the

1 Commission policy and the underlying court case that
2 basically says it's up to Interior to provide the
3 records to support any fishway it prescribes.

4 And FERC, in this case, in the La Grange case,
5 have been very careful and very meticulous about
6 identifying its responsibilities with respect to fish
7 passage. Those, I think, are on this page B-2 and B-3
8 that I referenced previously in terms of downstream from
9 La Grange, downstream of the La Grange project to
10 upstream of the Don Pedro Project.

11 And I agree with Jim that Larry has -- and
12 Larry has introduced many questions that need to be
13 answered. We completely understand and agree with that.
14 And he's done a great job of identifying the questions,
15 and they're important questions to answer. But NMFS
16 needs to answer those, not FERC or not the Districts.

17 And that falls into those responsibilities and
18 obligations of Interior or converse here to provide the
19 records that support any fishway it prescribes.

20 MR. THOMPSON: I'd like to respond.

21 MR. ETTEMA: Okay. Real quick.

22 MR. THOMPSON: Real briefly, we're asking for
23 this information in a Federal Power Act proceeding.

24 When Jim said this is our decision and our
25 decision alone, I'm really not understanding that. It

1 is true that we have the authority, it is our sole
2 authority under Section 18 of the Federal Power Act, but
3 it's a Federal Power Act proceeding, so we're asking for
4 that information to inform a decision.

5 We would think FERC would want to see that.
6 This is a project they're going to license. And this is
7 a project that affects the federally listed species.

8 The Endangered Species Act says that FERC,
9 federal agencies, in Section 7, are to take actions to
10 promote the recovery of a species. So it's not simply
11 NMFS' -- it's not they don't need it, we need it, it's
12 ours.

13 Let me draw -- let me also say, this
14 information would inform other participants in the
15 licensing proceeding. There are other participants who
16 have mandatory conditioning authority such as the
17 California State Water Board. The State Water Board
18 might decide they want to take some measure to protect
19 the species, enhance it, somehow pass fish or take some
20 actions that have to do with the genetics of these fish.

21 Let me draw one more analogy. If we have a
22 federal agency that has a reservation that overlaps with
23 a project area such as in this case, the BLM, just use
24 them as an example, they have mandatory conditioning
25 authority under Section 4(e) of the Federal Power Act;

1 correct? Everybody knows that. When they ask for
2 studies, FERC doesn't say, well, that's your problem,
3 BLM. That's your decision. You go out and get that
4 information. Or Forest Service, you go out and get that
5 information for your 4(e) authority. That's your
6 decision.

7 FERC almost -- almost always says yes, this
8 temperature model is needed, this flow model, we need
9 hydrology information about the flow effects of the
10 project, the gravel effects of the project, et cetera.

11 What's the difference? In this case NMFS is
12 asking for information in the Federal Power Act to
13 inform our Federal Power Act licensing authority. It's
14 that simple.

15 MR. WOOSTER: Nick, I need to clarify one thing
16 that Jim said. He said that this information, genetic
17 information, was for our stock selection and that alone.
18 It's not. It goes far beyond that. This information is
19 needed to know before we can make the decision of
20 whether to reintroduce fish above, below the dam. It's
21 at the core of the decision here. It's not just for
22 picking which fish do we want to put upstream or
23 downstream if we were to go ahead and prescribe.

24 Secondly, the view that genetic information is
25 only research information is really not keeping up with

1 the times. At this point genetic sampling is being done
2 on projects throughout California, throughout the
3 Northwest, as a monitoring tool. It's -- the genetic
4 field of fish has exponentially grown in the last
5 decade.

6 And if you look at projects on the American
7 River, the Feather River, the Sacramento River, it's a
8 way that people are actually quantifying what fish are
9 returning, and monitoring them through time. It's not
10 purely a research effort. It's at this point akin to
11 escapement monitoring, a screw trap in a way.

12 And to summarize, for me the nexus here, you
13 could just look at basically how you kind of organized
14 your questions to us. You wanted to know about what was
15 going on with the lower river fish and what was going on
16 with the upper river fish. They were distinct, separate
17 questions. That alone is a project fish -- or project
18 effect.

19 If you took out La Grange Dam, you'd have one
20 continuous population and you wouldn't be segmenting
21 your questions into upstream fish, lower river fish.
22 It's the entire state of how *O. mykiss* are evolving in
23 the Tuolumne now is a project effect. The limiting of
24 the anadromous fish and gene flow to the upper river is
25 a project effect that we know it's affected the

1 populations.

2 MR. ETTEMA: Okay. And I just want to touch on
3 one thing that Larry said. He said the information
4 might inform other participants, but you've also
5 indicated in the letter that this might inform, you
6 know, 10(a) recommendations, or 10(j)s. Would it inform
7 any other recommendations for NMFS other than the
8 Section 18, the prescription --

9 (Brief telephone interruption.)

10 MR. THOMPSON: The answer to the question is
11 yes. I mean, I want it to be clear that we understand
12 we can only dispute with respect to our Section 18
13 authority. But certainly, if we decided not to pass
14 fish upstream but just enhance the lower river
15 population, we might submit a 10(a) or 10(j)
16 recommendation to say improve flows or improve
17 temperature or habitat for the O. mykiss downstream.

18 In addition, you know -- again, we can only
19 talk about the 5.9(b) criteria here -- but 5.9(a) asks
20 us to submit information to be used in future Section 7
21 consultation with the Commission.

22 So I'm just going to link to that by saying --
23 I emphasized it starting in my opening remarks -- this
24 is a federally listed species we're talking about. So
25 whether it is, in the Federal Power Act world, it's

1 Section 10(a), Section 10(j), and our Section 18
2 fish-passage conditions, but it's pretty likely -- it's
3 almost a certainty that this project will undergo future
4 formal Section 7 consultation. And whatever we decide,
5 including what FERC decides, its proposed action will
6 undergo that consultation, including our fishway
7 prescription. It will have to be reviewed to make sure
8 that it promotes recovery and doesn't do harm.

9 MR. DEVINE: This is John Devine, HDR.

10 Just to mention that ESA is not a mandatory
11 condition authority, and I don't know that it really has
12 a bearing or should have a bearing on this technical
13 panel and their decision, because it's not a mandatory
14 conditioning authority and therefore shouldn't be under
15 discussion.

16 MR. WOOSTER: Nick asked about 10(a) and 10(j).

17 MR. ETTEMA: Just because it's part of the
18 letter there. Yeah. Well, I was just curious as to how
19 you thought the result of the genetic study might result
20 in some license condition about flows. Would you look
21 at the genetic makeup and say, oh, well, because it's
22 this strain, we would come up with a license
23 prescription or a license condition that would adjust
24 flows to improve habitat for a certain genetic strain or
25 something like that.

1 I was trying to understand, because you
2 mentioned, you know, 10(j)s and 10(a)s in the letter,
3 and I was just trying to understand that a little bit
4 better.

5 MR. THOMPSON: That's a really good question.
6 But I wouldn't look at it just as is it a genetic strain
7 that we're trying to promote.

8 John talked about how the genetics -- the world
9 of genetics has really changed in the past decade or
10 more, and it's now becoming clear that we all know that
11 it's expensive and difficult to track fish in a river,
12 especially little guys. You tag them over many years to
13 figure out how many of them are there, where are they
14 moving, holding, and such.

15 And some of these genetic techniques that we
16 are asking to do is -- involve what's called a parentage
17 analysis. And what we're learning is that when
18 populations are low or difficult to sample, you can
19 learn a lot about the size of the population by looking
20 at the genetics, for example.

21 You can look at the diversity. You can -- you
22 can essentially build a genealogy so that if you sample
23 an adult fish at the upstream migrating weir and you do
24 genetic analysis of it, that -- that's a parent. Say
25 it's a female steelhead coming in. You can sample the

1 offspring, the little guys, and do a similar genetic
2 analysis, and you can map the offspring to the parent.
3 And you can do this over subsequent generations, so you
4 get like a family tree, a genealogy over many years.

5 If you were trying to just tag the fish with
6 markers, you know, little pit tags, it would be very
7 difficult to do that kind of thing. Maybe impossible.

8 But what -- so to get at your question, Nick,
9 the downstream alone genetic information could be used
10 to indicate the health of that population without really
11 doing -- you know, it would be information that would
12 add to things like snorkeling and population estimates.
13 And then we might -- we might say, listen, this
14 population isn't doing well. We know more about it.

15 We might find out, as John said earlier, this
16 population is made up of hatchery strain. We might find
17 out it's made up of fish that washed down over La Grange
18 Dam and repopulated. We don't know.

19 MR. ETTEMA: Okay.

20 MR. THOMPSON: We need the study.

21 MR. ETTEMA: I feel we've hit on No. 1 and
22 No. 2 as well. I had one specific question related to
23 Question No. 2, and that is: Under what conditions
24 would NMFS not prescribe a fishway?

25 Is that really -- because it seems to me that

1 the options would be NMFS would prescribe the fishway or
2 they would choose to include that standard re-opener
3 sort of -- is there a condition where you would actually
4 not choose to prescribe a fishway at all? There would
5 be nothing, no re-opener. Or is it really just one or
6 the other? Is it -- would you put the re-opener? Would
7 you ask for the re-opener or would you just prescribe
8 the fishway?

9 MR. THOMPSON: Do you want to take it?

10 MR. HASTREITER: Can I answer from my
11 experience? I've never seen --

12 MR. ETTEMA: Sure, Jim.

13 MR. HASTREITER: -- NMFS not reserve their
14 option. So if they don't prescribe a fishway, they
15 typically reserve their option to prescribe --

16 MR. ETTEMA: Right.

17 MR. HASTREITER: -- in the future.

18 MR. EDMONDSON: I think that's what I was -- I
19 was trying to go back to my model.

20 MR. HASTREITER: They look perplexed, so I was
21 just --

22 MR. ETTEMA: I'm wondering, if you did this
23 genetic study, would you look at it and say, oh, well,
24 nope, no fishway at the Tuolumne River, you know, based
25 on that one study or --

1 MR. WOOSTER: Yes, you could discover certain
2 traits, genetics, in the upper watershed that would deem
3 it a no-go. That's more or less the feedback we're
4 getting from our Science Center, that you need to
5 quantify what is downstream, what is upstream, before
6 you can start looking at the effects of inbreeding and
7 outbreeding and what impacts you have on the population.
8 Exactly what you would need to find up there to
9 quanti- -- to make it a no-go, I'd have to pull in the
10 Science Center to answer that aspect. But they have
11 advised us that you need to fully understand your
12 populations upstream, the project's impacts on those
13 populations by not allowing the gene flow from
14 anadromous fish into those isolated barrier populations.

15 So yeah, I think you're kind of driving at
16 could this genetic study, in and of itself, determine a
17 yes or no on the Section 18 at this time. I think the
18 answer is yes.

19 MR. EDMONDSON: Yeah. And I think -- I'm
20 trying to think back. We have engaged in relicensing
21 proceedings and not filed under 18 one way or the other.
22 In some of those cases where, instead, we were more
23 interested, for instance, coordinating flow releases for
24 the benefit of fish downstream, not necessarily looking
25 at the opportunities to pass.

1 And I'm thinking when we were involved in the
2 San Joaquin and some of the upper San Joaquin projects,
3 Big Creek, Vermillion, those facilities, we were looking
4 at opportunities to coordinate releases, looking for
5 opportunities to coordinate releases with eventual
6 restoration in the lower San Joaquin.

7 So there are times when we don't necessarily
8 prescribe under 18. There are various impacts and
9 opportunities for recovery that don't involve fish
10 passage alone.

11 And I'm sorry. This is Steve Edmondson with
12 NMFS.

13 MR. ETTEMA: Okay.

14 MR. DEVINE: Comments or questions from John
15 Devine, HDR.

16 One of the questions that we -- that arose in
17 our comment letter had to do with -- has the question of
18 the need for the information but answer. There was a
19 long description about in the -- in that section of the
20 NMFS response in terms of the state of the art of
21 genetic testing and that source of information, which
22 was very informative, but it wasn't clear that the
23 question was answered in terms of, well, what's actually
24 the need for the information; and that is, how this
25 specific information can be used to either prescribe a

1 fishway, not prescribe a fishway or reserve authority.
2 And what John is saying is that that's -- that is a
3 possibility and that the information could lead to not
4 prescribing a fishway, but that needs further
5 explanation from the Science Center or other parts.

6 We'd like to ask for that information. We'd
7 like to know how that is made. That would answer the
8 question. I think that's important for the Panel to
9 know -- to answer that Criteria No. 4. What's the need?
10 Explain the need for the information; that is, how will
11 this information be used to make decisions.

12 And we find what we're hearing today is it will
13 be and it could be used to decide, it would not be a
14 prescription, but others have to comment on that. And
15 we think it's important to hear and the Panel to hear
16 how will that information be used in that regard. And
17 more than just it will be, we're not sure how, because
18 others have to answer that. I think the Panel should
19 request that information in order to address that
20 comment and address that criteria.

21 MR. EDMONDSON: This is Steve Edmondson again.

22 John, that's a -- that's a good question, but
23 it's depending on the results.

24 MR. DEVINE: Right.

25 MR. EDMONDSON: So we can't say what are we

1 going to do with the information unless we know what the
2 information is. And I think Larry gave some examples,
3 and we can give further examples of where genetic
4 information is no longer used as a research tool besides
5 it's advanced to the point that it's being used as a
6 realtime decision-making tool. He gave some examples
7 that are examples other than the Central Valley I can't
8 think of -- and I'm looking at Rhonda -- of other
9 reintroductions in the Central Valley where we're not
10 using genetic information as a decision-making tool.

11 MR. DEVINE: But in this one you are.

12 MR. EDMONDSON: I can't think of one where
13 we're not using it as a decision-making tool. And
14 that's -- again, that's the advance of the science to
15 the point where it's used as a realtime decision-making
16 tool. And there are abundant examples of that. So how
17 we would use the information depends on exactly what
18 that information says. We can't predetermine what it
19 says. But we know what the questions are, and the
20 similar questions are being asked elsewhere in the
21 Valley in thinking about reintroductions.

22 And another example -- I'm sorry, Jim -- was
23 Potter Valley. We engaged in the Potter Valley
24 relicensing and did not prescribe under 18.

25 MR. THOMPSON: I want to be clear that if

1 the -- if the Panel agrees with what John Devine says,
2 that we have not explained to you adequately how we
3 would use this information to inform our fish passage
4 conditions, then you need to ask us, because I want to
5 provide that to you.

6 Steve is correct. I provided examples. Let me
7 give you an example, not having the study done. But if
8 the immigrating adult steelhead coming into the Tuolumne
9 are hatchery strays, for example, from the Mokelumne
10 hatchery, it is not likely we would put forward a
11 fish-passage condition and pass those fish upstream
12 without more study and more action.

13 John went over inbreeding depression and
14 outbreeding depression. If mixing these two populations
15 creates a worse condition than we have now, we would not
16 prescribe a fish-passage condition until we took some
17 other steps. And so I can't be more clear than that.

18 Would we just reserve, we might -- we might
19 reserve, we might implement a prescription that occurs
20 later in time. So we said this would -- this would
21 inform whether we do it and when we would do it and also
22 how we would do it.

23 MR. ETTEMA: Okay. And just to finish up these
24 two, I had one last question related to this, and what
25 were the -- what are some other studies or information

1 that would inform a fishway prescription? Is there any
2 other -- are there some approved studies for this
3 project specifically or some studies from the Don Pedro
4 Project that will also be used to inform a fishway
5 prescription?

6 MR. WOOSTER: Number 3? Is that -- are you
7 looking at Question 3?

8 MR. ETTEMA: No, no. I have just a couple
9 other questions related.

10 MR. THOMPSON: Well, let me start off, John.
11 Earlier I wanted to bring this up. I think, Nick, you
12 asked us, would this study alone be a yes or no.

13 MR. ETTEMA: Right.

14 MR. THOMPSON: And John correctly answered that
15 as this study alone could be a yes or no. But I wanted
16 to bring forward that we cannot discuss Study Request
17 No. 3 today. It's been determined we shouldn't. But
18 that discusses the habitat upstream, so that is another
19 study that we would -- if we had it done, we would use
20 the results to inform the potential fish-passage
21 condition. Would we pass fish from downstream to
22 upstream if the habitat up there were not good habitat?
23 Probably not. So there are other studies.

24 And John is also -- Wooster -- I wanted -- I
25 mean, we put together the fish-passage request, so we

1 certainly have other study requests forward that have
2 been either approved or partially approved that also
3 bear on -- you know, we have to know if it's feasible
4 and how we would pass the fish upstream and downstream,
5 the techniques themselves.

6 MR. ETTEMA: Right. And I thought I saw a
7 feasibility study perhaps that is approved or in
8 agreement between . . .

9 MR. DEVINE: The Districts proposed in its
10 revised study plan a fish-passage assessment, a portion
11 of which is a study of fish-passage options upstream and
12 downstream at La Grange/Don Pedro, and FERC approved
13 that study, and we intend, in collaboration with NMFS,
14 to conduct that study.

15 MR. ETTEMA: Okay. Other questions from the
16 Panel on Question 1 and 2? All right. I think we --

17 MR. AMBROSE: I just -- in terms of fish
18 passage, we had talked very early on about recovery and
19 recovery plan. What role does the Tuolumne River play
20 in recovery of steelhead? How important is the Tuolumne
21 River for -- can you answer that?

22 MR. HOLLEY: This is Tom Holley. I can try and
23 take a shot at answering that.

24 Our latest recovery plan identifies the
25 Tuolumne, upper Tuolumne, above Don Pedro Reservoir, as

1 a candidate watershed for potential reintroduction of
2 O. mykiss.

3 One of the actions, one of the recovery actions
4 is to investigate the potential of a reintroduction of
5 O. mykiss to the upper Tuolumne, so that means
6 undertaking its habitat studies, conceptual fish-passage
7 studies and, you know, some genetics studies like we're
8 talking about today.

9 So it is important to look at the watershed or
10 population currently in the Tuolumne. And, you know,
11 that's what the recovery plan calls for, investigating
12 fish passage into the upper Tuolumne.

13 MR. AMBROSE: Okay. And I had one other
14 question.

15 Jim, you made mention early on in regard to
16 genetics studies and FERC not having a history of moving
17 forward with those. Is that because FERC is worried
18 about setting a precedent or is that because the
19 latest -- or is there some other reason for that?
20 Because in this -- on page B-18 it cites the Don Pedro
21 Project, and as I understand it, NMFS didn't necessarily
22 have jurisdiction over that project because La Grange is
23 downstream. Is that necessarily an appropriate
24 rationale for deciding not to move forward with a
25 genetics study on La Grange?

1 MR. HASTREITER: I'm sorry. Is what the
2 appropriate rationale?

3 MR. AMBROSE: You cited the Don Pedro
4 Project --

5 MR. HASTREITER: Okay. I gotcha.

6 MR. AMBROSE: -- and the fact that you didn't
7 require a genetic study there. And it seems to say, by
8 reference, because we didn't require it on Don Pedro,
9 therefore, we aren't going to require it on La Grange.
10 But these seem to be two different projects. These are
11 two different projects. And at La Grange we have
12 anadromous fish downstream. And what NMFS, as I
13 understand it, is asking for is genetics studies on
14 steelhead downstream and O. mykiss upstream. And I'm
15 confused as to why the genetics study was denied for
16 La Grange by citing Don Pedro.

17 MR. HASTREITER: Well, it's a similar study.
18 It's a genetics study that Fish and Wildlife asked for.
19 Okay? And the rationale was identical, that essentially
20 it would inform a license condition by conducting that
21 study. It's just -- it's the same rationale.

22 MR. WOOSTER: The Fish and Wildlife study
23 requested almost no parallels to our study request.
24 They asked for a study of a hatchery Chinook plant in
25 the Don Pedro Reservoir. We're asking for a study of a

1 totally different species upstream and downstream of the
2 project. They specifically wanted to know about the
3 Chinook and Don Pedro. I fail to see the parallel
4 between -- Jim just said it was a -- I don't know if he
5 said identical or similar request to Fish & Wildlife
6 Service request to the one we're disputing today. I
7 fail to see the parallel, given that that was a study of
8 hatchery Chinook in Don Pedro Reservoir, and we're
9 asking for an evaluation of O. mykiss, a population that
10 has been fragmented and segmented by this project.

11 MR. HASTREITER: No, I see the difference. But
12 still, in this study NMFS needs to make a decision on
13 reintroduction. And this study that Fish & Wildlife
14 Service asked for, that wasn't necessary. So that's the
15 difference.

16 MR. WOOSTER: Okay.

17 MR. HASTREITER: So the Fish and Wildlife
18 Service isn't going to make a decision on
19 reintroduction; National Marine Fisheries Service is.

20 MR. WOOSTER: Yeah. So how does denying their
21 study, when they weren't making a reintroduction, have
22 any bearing on what we're talking about today?

23 MR. HASTREITER: It's still a genetics study --
24 just wait. Let me finish. It's a genetics study, and
25 it's not going to inform the license condition. Their

1 study wasn't going to inform a license condition. Your
2 study isn't going to inform a license condition. It's
3 going to inform your decision whether to reintroduce
4 fish to the upper basin.

5 MR. THOMPSON: Fish-passage license condition.

6 MR. HASTREITER: And those are your words,
7 Larry. And that's fine.

8 Our perspective is that NMFS needs to make a
9 decision on passing fish to reintroduce them to the
10 upper basin.

11 You know, I've explained it. It's very simple,
12 very straightforward.

13 MR. WOOSTER: The Section 18 prescription is a
14 license condition.

15 MR. HASTREITER: It is.

16 MR. WOOSTER: Okay.

17 MR. ETTEMA: Okay.

18 MR. CRAVEN: Let me take one more shot at this.

19 Why wouldn't that be -- lead to a license
20 condition?

21 MR. HASTREITER: I'm not saying it wouldn't
22 lead to a license condition. Okay? What I'm saying is
23 they want this genetic information to make that decision
24 whether they're going to put fish up there. Okay?

25 They've already explained, depending on what

1 that information shows, they then will decide whether
2 yes, we're going to submit a Section 18 prescription or
3 we're not going to, or some other combination of that.

4 So yes, it could lead to that, but the first
5 decision is NMFS needs to decide whether they're going
6 to introduce or reintroduce fish to the upper basin, and
7 that's the purpose for that genetics study.

8 MR. CRAVEN: But don't they need the results of
9 the study to determine whether they will or won't?

10 MR. HASTREITER: And they do. I agree. We
11 don't. That's the basis of the argument here. And John
12 has already cited Commission precedent, and there's been
13 other cases.

14 MR. THOMPSON: But Richard, your question is a
15 really good question. And in the opening remarks NMFS
16 said we are going to stick to the Section 5.9(b) study
17 criteria. So if we could go back and look at
18 Section 5.9(b)(5): We must explain how the study
19 results would inform the development of license
20 requirements. Wouldn't they inform the development of
21 license requirements, Jim, the genetic result?

22 MR. HASTREITER: No.

23 MR. EDMONDSON: But for the same reason --

24 MR. THOMPSON: Well, then --

25 MR. EDMONDSON: This is Steve Edmondson.

1 If they would inform NMFS' determination under
2 18, then why wouldn't they also inform FERC's
3 determination under the balancing provisions of the
4 Federal Power Act under 10(a) and 4(e)?

5 FERC also prescribes and creates terms and
6 conditions and licenses. It's not just NMFS. And if it
7 would apply and if we agree that it makes sense for
8 NMFS, then it would make sense for the Commission. The
9 Commission, under Federal Power 4(e) must evaluate
10 licensing issues, must give equal consideration.

11 And, you know, again, if it makes sense that
12 NMFS would use it for that, then it would make sense
13 that FERC would. FERC can also prescribe or also
14 determine conditional license to include fish passage.

15 MR. HASTREITER: I think in a case like this --
16 you know, Hell's Canyon is a good example -- the
17 Commission is not going to take the lead in making
18 decisions on reintroduction of fish above projects. And
19 we see that as NMFS's responsibility. And any
20 information associated with that sort of decision is
21 NMFS' responsibility.

22 MR. EDMONDSON: Has FERC ever required fish
23 passage in a license, independent, outside of
24 Section 18?

25 MR. HASTREITER: You know, I don't know. Not

1 in any cases I've worked on.

2 MR. EDMONDSON: Okay. I would say that FERC
3 has, and FERC has a responsibility under the Federal
4 Power Act and the balancing provisions under 10(a) to
5 consider and include provisions that balance --

6 MR. HASTREITER: We ultimately will get
7 involved in that. But NMFS has the lead on making the
8 decision on reintroduction.

9 MR. ETTEMA: All right. We're going to take
10 one last comment from John here and then we're going to
11 take a break.

12 MR. DEVINE: This is John Devine, HDR.

13 I think the question here is not the need for
14 the information, it's who is obligated to get the
15 information. And this was the purpose of the opening
16 remarks we made where FERC policy, backed up by court
17 decisions, have said that it is up to the resource
18 agency, Interior Commerce, Fish & Wildlife Service, or
19 NMFS, to provide the record to support any fishways it
20 prescribes. It's as simple and it's as clear as you can
21 be.

22 Now, if FERC had decided that it needed that
23 information to decide on a fishway, if fishways were
24 appropriate for La Grange and Don Pedro, it would have
25 asked for and decided that that information on genetics

1 was necessary for its decision. FERC has decided it is
2 not.

3 What FERC has decided in their Study Plan
4 Determination is that the fish-passage assessment that
5 the Districts proposed, which is a complete assessment
6 of fish passage upstream and downstream, is adequate for
7 FERC's purposes of estimating the feasibility or
8 establishing the feasibility or not of fish passage.

9 So it will make a decision on the record, we
10 assume, balancing power and nonpower resources, by using
11 the fish-passage assessment that the Districts have
12 proposed and FERC has directed the Districts to do.

13 So FERC, absent information on fish passage --
14 it will have plenty of information on fish passage --
15 FERC does not make decisions, at least to my knowledge,
16 on reintroductions, how to colonize upstream habitat,
17 what strain to use, what's the selection of the source.

18 These are decisions, as NMFS has gone to great
19 lengths to point out here, that NMFS will have to make.
20 I don't think they would want FERC to make those
21 decisions. And they aren't left to FERC to make.
22 They're for NMFS to make.

23 And it goes back to the original comments I
24 made in the opening remarks. Again, the policies and
25 procedures, the court precedents are clear: It is up to

1 the resource agency to develop the information it
2 requires to support its fishway prescriptions.

3 MR. ETTEMA: Okay. Thanks, John.

4 And with that, we're going to take a break.
5 The time is 11:00 right now. We're a little bit behind
6 on the break. But is 15 minutes okay or can we do it in
7 less? Can we do it in ten? Okay. Let's take a
8 15-minute break.

9 (Recess taken, 11:00 to 11:19 a.m.)

10 MR. ETTEMA: We will reconvene the meeting.

11 We left off No. 3. So No. 3 is: Why is
12 existing genetic information for *O. mykiss* inadequate to
13 describe the genetic makeup of populations or assess
14 potential project effects?

15 And then: Are there any other ongoing or
16 proposed studies that would contribute additional
17 information on *O. mykiss* genetics, population structure,
18 or gene flow?

19 NMFS, do you want to go first?

20 MR. WOOSTER: Sure.

21 Kathryn, are you back on? Can you hear us?

22 MS. KEMPTON: I am. Thank you.

23 MR. WOOSTER: Okay. Existing information is
24 inadequate. Really, simply, one, due to a lack of
25 samples and really an extreme advancement in the

1 technology that's available now to look at genetic
2 samples.

3 There's been a lot of quotes back to Nielsen
4 2005 and Garza and Pearse or Pearse and Garza -- I think
5 Garza and Pearse -- for example, Nielsen, et al., was
6 looking at, I believe, 11 loci markers; Garza and Pearse
7 in 2008 were looking at 18. And Garza and Pearse --
8 they're part of our Science Center lab -- their latest
9 work, I believe, is looking at 105 markers, and it's not
10 only the -- they've expanded the number of markers,
11 they've identified and isolated a lot more that are
12 highly variable between populations, so that, you know,
13 by a factor of 10 they've increased how many markers
14 they're looking at and they've also identified more
15 responsive ones. Add that to the algorithms that
16 they've developed to be able to process populations, the
17 population structure, it's leagues beyond what was
18 available 10, 15 years ago.

19 Samplewise, we're -- conversations with our
20 Science Center, we believe they have one sample from the
21 upper watershed and one sample from the lower watershed.
22 And by sample -- because there's multiple pieces of
23 tissue, but it's one geographic and temporal spot in
24 time that they're looking at, so -- and there is the
25 potential, I think, to use those -- each sample that

1 they do have in any analyses going forward.

2 But when we approached the Science Center to
3 talk to them about this study and their availability,
4 they were extremely receptive, basically because they
5 felt like they knew close to nothing about Tuolumne
6 River genetics, which is a key piece to understanding
7 the Central Valley.

8 The previous studies were not Tuolumne-specific
9 or Tuolumne-focused. They were basically broad-brushed
10 Central Valley-wide analyses of *O. mykiss* genetics. So
11 that's basically why the existing information is
12 inadequate for the study, the needs here, within this
13 relicensing process.

14 What other ongoing or proposed studies, right
15 now, on the American River, the Bureau of Reclamation is
16 doing a very similar study for *O. mykiss* that we
17 proposed here for the Tuolumne. That's part of a
18 potential reintroduction effort on the American River.

19 That study, in and of itself, I think, could
20 contribute valuable kind of lessons learned to the study
21 that's proposed here. I think there's lessons to learn
22 to see what happens to *O. mykiss* genetics when you
23 segment a population with a dam. But again, it's --
24 none of that study is Tuolumne-specific, so it's not
25 going to fill the void that we have in this project.

1 MR. HASTREITER: Is that in the San Joaquin?

2 MR. WOOSTER: It's -- no. It's technically
3 Sacramento.

4 MR. HASTREITER: Oh, okay.

5 MR. WOOSTER: It comes in right about where the
6 Sacramento and San Joaquin rivers meet.

7 MR. HASTREITER: Okay.

8 MR. WOOSTER: You can step out and see the
9 mouth almost from this building.

10 MR. HASTREITER: Okay. I was just wondering
11 where it basically was.

12 MR. WOOSTER: Other existing studies. NMFS, as
13 of last week, we obtained -- were awarded some funding
14 to do genetic work on the Tuolumne. We're estimating
15 that we have about a third of what the cost of this
16 study could be available to us, so we're hoping, either
17 through your determination, FERC's orders, the
18 Districts' willingness to partner, with the funding that
19 we have available, to complete the study.

20 MR. DEVINE: How much funding do you have,
21 John?

22 MR. WOOSTER: We have about 50,000 for lab
23 work, and we're -- I don't want to say that this work
24 has to be done by NMFS' Science Center, but if you're
25 interested in any level of efficiency, you would run the

1 work through the Science Center. They're the ones that
2 have the database, the algorithms, all the research that
3 it takes to really do a genetics evaluation. Now you
4 can actually move into the applied side very easily with
5 what they have developed. We are working on additional
6 money for fieldwork and sample collection.

7 MR. DEVINE: Thank you.

8 MR. THOMPSON: Can I add something just real
9 briefly?

10 What John talked about, with the American River
11 study, I mean, it's Bureau of Reclamation-funded,
12 because it's their dam. They manage it. It divides the
13 lower American and upper American, so there's a parallel
14 there. We might be able to get you a copy of it, send
15 it to the Panel. I think it would be real informative.

16 The study was ordered under the Endangered
17 Species Act biological opinion. It was part of the
18 feasibility study for fish passage, should we pass fish.
19 And so one of the first studies they did was determined
20 should we pass the lower American steelhead to the upper
21 American. And so they did a genetics study of both the
22 lower American and upper American. I think John
23 described that, but I just had a little more detail.

24 MR. WOOSTER: And it actually preceded any kind
25 of fish-passage evaluation and design. That was

1 basically their first step was to do a genetics
2 evaluation on the American River.

3 MR. ETTEMA: Okay. Any other comments on
4 existing information or potential other sources of
5 existing information or . . .

6 MR. DEVINE: I would ask, John, I wasn't sure,
7 were you referencing the two studies that have been done
8 on O. mykiss populations on the Tuolumne?

9 MR. WOOSTER: They were Central Valley-wide
10 studies that had a sample from the Tuolumne.

11 MR. DEVINE: And so the thought is those
12 samples were too small to be representative or --

13 MR. WOOSTER: The one spot -- to go -- the one
14 geographic spot and one temporal spot, one temporal
15 slice. We understand the upper Tuolumne sample is from
16 Cherry Creek is our understanding.

17 And these samples also, I believe some of them
18 are kind of collected ad hoc, that various folks had
19 gathered and brought in, weren't necessarily part of a
20 design study plan, kind of just whatever information you
21 can -- whatever samples are available to you kind of
22 approach.

23 So, for example, in the upper Tuolumne, if you
24 have one sample from Cherry Creek, you don't have
25 anything on Eleanor Creek, south forth Tuolumne, middle

1 fork Tuolumne, Clavey River, north fork Tuolumne,
2 mainstem Tuolumne, mainstem Tuolumne, say, above Early
3 Intake or below Preston Falls, the historic barrier to
4 anadromy. There's a large suite of areas that should be
5 sampled. So we weren't able to really locate much
6 information about the one lower river Tuolumne sample.

7 MR. DEVINE: Okay.

8 MR. WOOSTER: And I don't know much about
9 Nielsen's work. That was the 2005 paper. But also, I
10 understand it was a very limited sample. But I was
11 told.

12 MR. DEVINE: Are those samples still available
13 to your lab?

14 MR. WOOSTER: I believe the stuff that fed the
15 2008 paper are, the one lower and the one upper. That's
16 my understanding, that you'd have two samples to
17 jump-start the study.

18 MR. DEVINE: Has the Science Center given you
19 any ideas of what sample size they were looking for?

20 MR. WOOSTER: They were approximately looking
21 for 25 to 50 tissue samples per geographic location we'd
22 like to characterize. That allows you to do what they
23 call a population-level analysis as opposed to just an
24 individual-fish analysis. So if you want to take that
25 range and extrapolate the -- how many areas you're

1 looking for, you can have a rough estimate on the number
2 of samples.

3 MR. DEVINE: Thank you.

4 MR. ETTEMA: Okay. I think we're starting to
5 actually touch on the next question.

6 I wanted to point out one thing. There was one
7 other study that the Districts had cited. I believe it
8 was in the RFP. It was Lindley, et al., 2007. And can
9 we ask that that be submitted for the record?

10 MR. DEVINE: Yes.

11 MR. WOOSTER: We have it.

12 MR. ETTEMA: You have it as well, but you
13 didn't cite it, but I thought I'd ask for it.

14 MR. WOOSTER: I believe that you're citing the
15 study that talks about the historic extent of O. mykiss
16 population. It's not a genetics study.

17 MR. DEVINE: Right.

18 MR. ETTEMA: Okay.

19 MR. THOMPSON: I'm not sure, but my knowledge,
20 that paper is 2006. But we could -- why don't we give
21 him both. One is about salmon and steelhead, and I
22 believe the 2006 paper is just about steelhead, talks
23 about the historic --

24 MR. ETTEMA: Whatever's cited in the record.

25 MR. THOMPSON: Okay.

1 MR. ETTEMA: And then any other sources of
2 information. We have the Central Valley, I think it's
3 the recovery plan is already submitted on the record,
4 but is there any other sort of review, like I was
5 thinking for steelhead, is there a five-year review? Is
6 there a recent five-year review that would have
7 information that's pertinent to genetics?

8 MR. THOMPSON: Yes.

9 MR. WOOSTER: What year was that last?

10 MS. REED: The most recent one -- this is
11 Rhonda Reed. The most recent five-year status review
12 was completed in 2011, and so it's been five years.
13 We're working on the next one now, and, you know, it's
14 in progress.

15 MR. WOOSTER: Okay.

16 MR. THOMPSON: I have that document on my
17 computer.

18 MR. ETTEMA: Okay. Perfect. Thank you.

19 MR. DEVINE: The only other thing I could
20 mention is that the reference project on the American
21 River is not a FERC-licensed project, so different
22 rules, protocols, and policies, of course, apply.

23 MR. ETTEMA: Right. Any other questions from
24 the other panelists on No. 3?

25 MR. AMBROSE: No.

1 MR. ETTEMA: I think we're kind of already
2 starting to get into that No. 4. So what specific
3 method is recommended to determine effects of the
4 project on the genetic composition of *O. mykiss* in the
5 Tuolumne River above and below the project?

6 MR. WOOSTER: I mean, basically what I was
7 referring to, what's available now, you take a tissue
8 sample, it's generally a very small fin clip, and we're
9 recommending that you really evaluate all the potential
10 genetic variation within the upper watershed, so within
11 the mainstem, the main tributaries, and above and below
12 any known natural barriers on those tributaries. I'd
13 estimate it as somewhere between 12 and 14 unique
14 geographic sites in the upper watershed.

15 MR. ETTEMA: With how many samples per site?

16 MR. WOOSTER: Twenty-five to 50.

17 MR. ETTEMA: Okay. Twelve to 14 locations in
18 the upper watershed, based on, you said, natural
19 barriers?

20 MR. WOOSTER: Well, some of it's based on --
21 there's one of the Lindley papers that shows the
22 historic extent in the tributaries and upper watershed,
23 and so you would look in those tributaries, you would
24 attempt to look above and below any known natural
25 barriers within those tribs, multiple samples within the

1 mainstem, and that -- although it's not a project
2 facility, there's other dams in the upper watershed.
3 The City and County of San Francisco has multiple dams,
4 one of which is -- well, two of which are on the
5 mainstem, but the most downstream one is called Early
6 Intake Dam. Upstream of that is what's known to be
7 the -- presumed to be the historic extent of the
8 anadromous fish on the mainstem. It's called Preston
9 Falls. So we would recommend --

10 MR. ETTEMA: And that's downstream of Early
11 Intake?

12 MR. WOOSTER: That's upstream of Early Intake,
13 downstream of Hetch Hetchy.

14 MR. DEVINE: So just as clarification, is the
15 study that's -- that was proposed to extend above Early
16 Intake, as it was proposed by NMFS?

17 MR. WOOSTER: We did not develop a sampling map
18 for that study or we hope -- we'd like to develop that
19 in consultation. But yes, it would likely be beneficial
20 to take a sample above Preston Falls, what's known as
21 the historic extent of anadromy. That would help you
22 characterize what the genetics look like of fish that
23 were historically influenced by the anadromous fish
24 returning.

25 MR. DEVINE: Is that related to a project

1 effect?

2 MR. WOOSTER: The fish that are affected by the
3 project are -- would be everything downstream of natural
4 barriers, those that have had their anadromous gene
5 removed by the project.

6 To properly understand your effect on those
7 fish, it would be beneficial to get genetic samples of
8 fish above the natural barriers.

9 MR. DEVINE: So the project effects extend
10 above Early Intake and above other dams?

11 MR. WOOSTER: No. The project effects would
12 extend up to those -- the project effects would extend
13 up to any fish that's below -- downstream of -- between
14 Don Pedro and any barrier upstream.

15 MR. HASTREITER: So Preston Falls.

16 MR. WOOSTER: Preston Falls. But Preston Falls
17 is about a mile or two upstream of Early Intake.

18 MR. DEVINE: So Early Intake.

19 MR. WOOSTER: For the population affected by
20 the project?

21 MR. DEVINE: Yeah. The project effect.

22 MR. WOOSTER: Yeah.

23 MR. ETTEMA: Are there rainbow trout *O. mykiss*
24 above Early Intake and above -- is it O'Shaughnessy Dam
25 at Hetch Hetchy? Are there populations there that are

1 native or planted? Or do we know that information?

2 MR. WOOSTER: There are 0. mykiss populations
3 there. The native planted question is part of what this
4 genetics study would help inform. That would be true of
5 pretty much any population you take a sample from, you
6 would ascertain whether they are native or influenced by
7 a hatchery.

8 MR. ETTEMA: Mm-hmm. So you mentioned the
9 other -- the study at the Bureau of Reclamation dam on
10 the American River. Is that -- I'm trying to get a
11 better hold on the proposed methodology. Would you --
12 are you saying that this study would be -- would you use
13 the methods from that study for this study? Would it be
14 sort of a mirror study or a complementary study or would
15 it be . . .

16 MR. WOOSTER: I wouldn't call it
17 complementary --

18 MR. ETTEMA: Okay.

19 MR. WOOSTER: -- but a mirror, possibly.

20 MR. ETTEMA: Mirror.

21 MR. WOOSTER: At least as far as the genetic
22 and the method that you would collect the samples, the
23 lab analysis that we would do would be -- we, assuming
24 the Science Center -- would, as far as I understand, be
25 nearly identical. I think the general approach to where

1 you would geographically locate the samples that they
2 used in that upper watershed would be similar, so I
3 think there would be a lot of parallels between how they
4 conducted their research and what we would do here.

5 MR. ETTEMA: Okay.

6 MR. THOMPSON: Can I just add to that? The
7 database that our lab has put together is now statewide.
8 So they would have the ability, if we did Tuolumne River
9 study, to compare the genotype of all those fish with
10 all of the hatchery fish that they have in the database
11 over multiple years and all of the, for example, the
12 American River fish that were sampled last year.

13 So I want to point out that this has -- this is
14 really growing quickly, and our lab has recently
15 evaluated, I believe, the Coleman hatchery, the Central
16 Valley hatcheries, the one here in town, the Nimbus
17 hatchery, the Coleman hatchery up on Battle Creek. I'm
18 not sure if the Mokelumne hatchery, I believe.

19 MR. WOOSTER: Yes.

20 MR. THOMPSON: Yes. So these are all in the
21 database.

22 So if we want to understand -- for example,
23 Nick, you asked about the fish that might have been
24 stocked above Hetch Hetchy and up in there and above
25 O'Shaughnessy Dam, the answer is, we can take a look at

1 their genotype and compare.

2 So I want to loop back to one more thing. This
3 really speaks to cost-effectiveness. The database is in
4 place. The genetic techniques are in place. There's a
5 lot that's already in place.

6 And with one more point I want to make about
7 the method, the very first paper that's in the lit
8 sources describes the genetic method.

9 I'm not a geneticist, and I would go over my
10 head real quickly, but if you take a look at this, these
11 are personnel at our lab that developed this discovery
12 and characterization of these SNPs, single nucleotide
13 polymorphisms.

14 John talked earlier about a-hundred-and-some
15 markers. The abstract says that they characterize
16 139 SNP loci. So those are in the database and they can
17 do this analysis. And then he said they also developed
18 the protocol for all of the matches within these large
19 databases.

20 MR. DEVINE: I think that helps explain why
21 NMFS would like to have the information, but it doesn't
22 explain why FERC needs the information. FERC has
23 already judged that it doesn't need the information in
24 all these databases, in the American River and all the
25 other places, so I think that's -- we understand that

1 NMFS would like to get that information and put it to
2 use, but that's not the question here.

3 MR. THOMPSON: It's a project effect, a project
4 effect from way back is that 120-foot high dam for
5 120 years blocking gene flow. That is what we're trying
6 to understand. That is a project effect, and we believe
7 FERC should evaluate and order studies to evaluate such
8 project effects.

9 MR. WOOSTER: The database we're talking about
10 leads to their next question. He asked how can we
11 isolate other anthropogenic effects. That database is
12 what allows you to take the genetic samples from
13 Tuolumne and the populations you have affected, put them
14 into that database, and then it helps you isolate
15 whether there's a hatchery influence or not, whether
16 these fish -- how genetically diverse they are. It's
17 the background information that gives the context to the
18 level of project effect you've had on these populations.
19 That's why we'd like the information, John.

20 MR. ETTEMA: Okay. I think we'll, let's see,
21 No. 5, we're getting into there right now. You sort of
22 answered No. 5. What about other -- I had some other
23 additional questions here. What about -- how do you --
24 are you asking for ongoing operational effects or
25 historical effects of the project or is it a

1 combination? I'm trying to wrap my mind around that.
2 Are you trying to tease out present-day effects or just
3 what --

4 MR. WOOSTER: I think it's a combination. It's
5 an ongoing effect. It's been going on for 120 years.

6 If you're asking whether you can separate what
7 happened in the first 120 years and what the genetic
8 effect is this year, that's not possible.

9 But yeah, it's -- you're looking back in time
10 as well as what is currently happening, project effects,
11 and what is likely -- you know, it helps you inform what
12 is going to happen over the future license.

13 MR. ETTEMA: Okay. And then as far as other
14 factors, what are some of the main factors that might
15 affect the genetic makeup of these fish? So you've
16 indicated there's some natural barriers that could
17 create some differences in the upper watershed, hatchery
18 influence. Are there any other major items or any other
19 items that --

20 MR. WOOSTER: Well, all fish upstream of the
21 dam, upstream of the Don Pedro Project, we suspect, but
22 we won't know until the study's complete, that those
23 fish have been selected for against having a migratory
24 gene. That would be a big effect, much in the way you
25 would -- above and below a natural barrier you often

1 would see the migratory genes selected against for the
2 above-barrier versus below-barrier. So that's a
3 potential effect of this project that you would see --
4 you would look to evaluate above Don Pedro.

5 MR. ETTEMA: Any other questions or comments
6 from . . .

7 MR. THOMPSON: I think John just answered it,
8 but just to add, I think we went over kind of -- sort of
9 missed talking about a major effect of a dam and that's
10 that even if you have downstream passage -- and, Nick,
11 you asked about that earlier -- that it's a one-way
12 passage, and O. mykiss in the upper watershed, smolt, go
13 to the ocean. Those adults cannot come back to that
14 population; right? They're prevented from going back
15 upstream where they originated. Therefore, over time,
16 what happens is that there's no evolutionary advantage
17 to anadromy.

18 The advantage in anadromy is usually -- and
19 most of the models show -- that adults that could come
20 back from the ocean are much larger than resident fish,
21 so they contain many more eggs, the females.

22 So that's the advantage that is brought back,
23 you know, the life history advantage, the evolutionary
24 advantage.

25 I don't think we talked about that, but I think

1 it's obvious that fish upstream, smolt, that benefit to
2 that population is lost because those returning adults
3 cannot go up there, spawn, and produce more fish up
4 there, up above the La Grange Dam. So that is a -- that
5 is something we want to investigate.

6 And John is right: The propensity to migrate
7 among those O. mykiss is something that we will be
8 studying. We didn't spell that out, but it is something
9 that's now under study. And if we can get you a copy of
10 the American River study, that preliminary report that
11 we're talking about, you'll see that they saw some
12 differences among the upper American populations in
13 terms of their propensity to migrate.

14 And so it's kind of expected that what we might
15 see is that O. mykiss just upstream of Don Pedro
16 Reservoir, for example, might migrate down to the lake,
17 down to the reservoir, and then back upstream, more so
18 than O. mykiss somewhere else in the population.

19 I'm telling you this because the propensity to
20 smolt in anadromy is very important because the listed
21 entity is the steelhead, which is the anadromous form of
22 the O. mykiss.

23 MR. DEVINE: I'll only add that the -- there
24 are two parts to the 5.9(b)(5). One is project effects
25 and the other is will it inform the development of

1 license conditions. And in this case it's license
2 conditions that are placed on the license by FERC. So
3 will it inform the development of FERC license
4 conditions. That's FERC.

5 NMFS can prescribe fishways, and FERC can
6 decide whether to add that fishway to a license or not.

7 If they decide not to, they don't issue the
8 license, because this was a prescription that FERC
9 cannot change, so it has a choice, to add the
10 conditions, to add those prescriptions as conditions to
11 a license or not.

12 So the question, though, does it inform license
13 conditions, has to do with whether it informs the
14 development of FERC's license conditions.

15 FERC has said, as I mentioned previously, that
16 the fish passage assessment that's been proposed in this
17 project is adequate to -- for FERC -- to develop its
18 license condition.

19 There's an extensive study already proposed
20 that will look at fish passage at the project as a
21 mitigation for a potential effect, for an alleged
22 effect, if you want to call it that, on fish passage.

23 And if fish passage is decided by FERC to be
24 proper mitigation for some effect, if that's also shown,
25 then they would add that to the license, and that then

1 deals with the license condition that deals with the
2 project effect.

3 It's not -- this is different than a -- this
4 information about genetics is still talking about
5 information that NMFS would like to have and that NMFS,
6 if it needs it for its prescription, it is obligated to
7 get. It's not about whether the information will be
8 obtained, from a technical aspect and the science aspect
9 the information should be obtained. The question is:
10 Who's obligated to get it?

11 MR. EDMONDSON: May I respond to that? This is
12 Steve Edmondson, with NMFS.

13 I think the fact that FERC's determined that
14 the study wasn't necessary, it's obvious that's the
15 point of this hearing, and that we disagree with that
16 determination is the point of the hearing and something
17 for the Panel to consider.

18 Whether or not FERC is obligated to collect
19 this information or we use that information in study
20 determination, though, is what we're disagreeing with.

21 And I think, rather than my opinion or yours or
22 someone else's, I think we can go back to what Congress
23 said when they issued ECPA back in 1986, and the
24 Electric Power Protection Act conference report notes
25 that, and in quotes: "In exercising its

1 responsibilities in relicensing, the conferees expect
2 the Commission to take into account existing structures
3 and facilities and provide for these nonpower,
4 nondevelopmental values. And consistent with this
5 legislative imperative, the Commission also fully
6 evaluate the environmental harms caused by these
7 structures and facilities in order to give equal
8 consideration of nonpower values as mandated by the
9 Federal Power Act, Section 4(e), and must evaluate
10 relicensing in light of today's standards and concerns
11 and that procedures and substance applicable to the
12 original license, including the treatment of
13 nondevelopmental values, apply fully in relicensing."

14 And that's from the committee report in 1986.
15 So that's what we're disagreeing. We say that yes, it
16 is necessary, and yes, it's something the Commission
17 should be looking at.

18 MR. DEVINE: I don't think there's any
19 disagreement it's the scope of the studies that FERC
20 feels are necessary in order to meet the requirements of
21 the ECPA or any other part of the Federal Power Act, and
22 FERC has described in its Study Plan Determination with
23 very meticulous clarity what the scope of that study is
24 that it needs. And NMFS has not actually pointed out in
25 their -- in their -- trying to convince FERC that it

1 needs it, that FERC needs the information. What NMFS is
2 saying is that NMFS needs the information and FERC
3 should get it for us.

4 MR. EDMONDSON: And we disagree. We think FERC
5 does need this information. That's the point of this
6 dispute hearing. And we don't think that fish passage
7 is the exclusive domain of the National Marine Fisheries
8 Service. In fact, it is an obligation of FERC as well
9 as the action agency.

10 MR. DEVINE: And FERC is doing a study of that.

11 MR. WOOSTER: I'd like to hear from Jim. As
12 John pointed out, you recommended approving the
13 fish-passage study. What are you going to do with that
14 fish-passage study alone and without the genetic
15 information?

16 MR. HASTREITER: Well, you know, ultimately the
17 way the process works is, 60 days after we issue an REA
18 notice, you will give us preliminary prescriptions and
19 we will evaluate those based on the designs that the
20 Districts have come up with.

21 MR. DEVINE: Other things that I've seen FERC
22 do with that information is to evaluate whether they
23 think the efficiencies that NMFS would like are
24 practical and are able to be achieved with the project
25 designs that are provided in the license application,

1 and if they are, they might add that there could be
2 testing done to see that they would be -- meet
3 efficiency. They could comment on the design of those
4 fishways and the attraction flow amounts and many other
5 technical aspects of the fish passage and the cost, and
6 they would consider all those things. I've seen them
7 consider all those things in their assessment of fish
8 passage.

9 MR. HASTREITER: And there's been cases where,
10 you know, FERC has said that's a good thing to do and
11 there's been other cases where FERC has said it's duty.

12 MR. AMBROSE: Jim, could you give me an
13 estimate for how much this fish-passage study might
14 cost? Ballpark?

15 MR. DEVINE: The fish-passage assessment?

16 MR. AMBROSE: Yes.

17 MR. DEVINE: The fish-passage assessment cost
18 or the genetics?

19 MR. AMBROSE: Not the genetics. The fish
20 passage that FERC is requiring.

21 MR. DEVINE: I'd have to look.

22 MR. HASTREITER: I can't remember off the top
23 of my head.

24 MR. DEVINE: It's over a million dollars.

25 MR. AMBROSE: Okay. So it's over a million

1 dollars. But what I'm hearing in this discussion is
2 that there's the potential, using a cheaper study, to
3 potentially say fish passage is something we may not
4 want. We have -- for whatever reason. And it seems as
5 though that is the first question that you almost need
6 to ask, do you want to put fish up there or not, versus
7 requiring a fish-passage study that might cost a million
8 dollars. This seems like something that you would
9 almost ask before you make that next step.

10 MR. DEVINE: We made that point, actually,
11 that -- and that would be a NMFS decision. It's NMFS'
12 decision about reintroduction, not FERC's decision.

13 MR. HASTREITER: And we had that discussion in
14 the initial study plan meeting, and the Districts, in
15 fact, were totally against doing anything, even coming
16 up with, you know, a fish-passage design, so . . .

17 MR. DEVINE: I wouldn't say totally against.
18 We were wondering what comes first, the chicken or the
19 egg.

20 MR. EDMONDSON: But under the Federal Power Act
21 and under the Endangered Species Act it isn't NMFS' sole
22 responsibility for reintroduction and not FERC's. In
23 fact, it's just the opposite.

24 Under the Endangered Species Act we have
25 obligations -- we don't have -- except in cases where

1 we're an action agency, our obligations are listing,
2 planning, re-coordination. It's the action agency's
3 responsibility under 7(a)(1) to implement recovery use
4 authorities in furtherance of that. It's not NMFS'.

5 So this idea that if there's endangered species
6 listed, suddenly NMFS has no responsibility whatsoever
7 in terms of studies or actions isn't true and it's
8 inconsistent with the law or the Federal Power Act. And
9 I read to you from the conferees' report.

10 So this notion that, well, if it's a listed
11 species, then NMFS has -- or then FERC has no
12 responsibility just isn't true.

13 MR. DEVINE: I didn't say that. And I haven't
14 heard that said at all.

15 MR. THOMPSON: Well, again, I gave some
16 examples with parallels to the BLM, with respect to
17 their mandatory conditioning authority under
18 Section 4(e). I gave an example of the State Water
19 Board with their mandatory condition authority under
20 Clean Water Act Section 401, or the Forest Service.
21 What's the difference?

22 MR. DEVINE: But Larry, neither of them are
23 here.

24 MR. THOMPSON: When they ask -- when they
25 request for a study, the FERC staff often approves it so

1 that it will inform their license conditioning
2 authority.

3 MR. HASTREITER: And usually it's related to
4 the operational characteristics of the project.

5 MR. THOMPSON: Well, the operational
6 characteristics are going to be important here if we go
7 to a fishway.

8 MR. WOOSTER: Are we're going to keep the dam
9 that's part of this project?

10 MR. HASTREITER: I don't know. We haven't made
11 those decisions yet.

12 MR. WOOSTER: I think in the scoping document I
13 think it was listed. So if the dam is going to stay in
14 place, that operational condition of segmenting the
15 population of the upper and lower, preventing the
16 anadromous gene flow in the upper watershed will be part
17 of your project operations.

18 MR. THOMPSON: Yes. And we may need to alter
19 project operations, modify them somehow, to make a
20 fishway work.

21 MR. HASTREITER: I'm looking forward to your
22 recommendation.

23 MR. THOMPSON: It is -- it is directly related.
24 And we're hoping you have the information, Jim, to make
25 a decision. I heard John say that FERC will decide

1 whether or not to add a NMFS fishway prescription as a
2 license condition. Will you use any information to
3 decide that?

4 MR. HASTREITER: I don't think we have -- I
5 don't think that's what John said. Section 18
6 prescription is mandatory. What John said was if we
7 don't agree with that prescription or we think it's too
8 expensive or not worth it, we just wouldn't issue a
9 license. That's what John said.

10 MR. ETTEMA: Okay. So we've sort of touched on
11 No. 6, which is: Is the study appropriate? And we sort
12 of talked about the reverse, and then John posed the
13 question, what happens if the genetics study should come
14 before that.

15 My question is, is, because now we -- there is
16 an approved study plan to look at fish passage and
17 inform, will it inform the design and whether it's
18 feasible, would you say it's a feasibility study?

19 MR. DEVINE: As a label, a feasibility
20 assessment.

21 MR. ETTEMA: A feasibility assessment. Okay.

22 MR. DEVINE: Yeah.

23 MR. ETTEMA: Okay. So this gets to the heart
24 of justification. If that study were to come back and
25 say no, it's not feasible, then would this study still

1 be needed to inform fish passage?

2 MR. WOOSTER: From moving from the lower
3 watershed to the upper watershed, no.

4 MR. ETTEMA: Are these -- are these studies
5 best -- you know, if you were to do these studies, would
6 you do them all at the same time or would you do them
7 one -- you know, which one would you do first, and
8 should there be a timing component to it?

9 MR. WOOSTER: I can point to the American River
10 where they decided to do the genetics study first.
11 Within a FERC ILP process, which is timeline driven, I
12 would say you should do them simultaneously.

13 MR. ETTEMA: Okay. And then I had another
14 question. You know, we talked a little bit about
15 methods and number of samples and that kind of thing, so
16 that gives me an idea of sort of how you're getting to
17 the cost, \$75,000 to \$125,000, but any specifics as to
18 how you arrived at that number?

19 MR. WOOSTER: Yeah. The specifics were a rough
20 cost on what the lab cost is per sample. We have been
21 given a cost of about \$50 to \$70 of lab cost per sample.
22 And the part of that budget that is uncertain is really
23 the field effort to go collect --

24 (Brief telephone interruption.)

25 MR. WOOSTER: There's some uncertainty in the

1 cost invested in the field effort to collect the
2 samples.

3 MR. ETTEMA: And then I had another one about
4 alternatives, whether or not there is a more
5 cost-effective alternative, whether -- you know, whether
6 existing information or some other ongoing study -- you
7 mentioned that you're doing -- or that you received
8 funding for another genetics study on the Tuolumne
9 River, but it would -- it's a third of the cost of this
10 study. So we've sort of touched on that already. I
11 guess, why -- so why would that study not fill the gap?
12 Why do you need the --

13 MR. WOOSTER: I'd probably revise our estimated
14 cost of this study to about \$150,000. And we've had
15 additional discussions with the Science Center beyond
16 when we finished and drafted this study almost a year
17 ago at this point. It's designed to -- the money we
18 have at this point is designed to contribute to the
19 study. I wouldn't call it a separate study.

20 MR. ETTEMA: Okay.

21 MR. WOOSTER: It turns into a separate study if
22 FERC and the Districts aren't involved. But our hope at
23 this point -- when we applied for a competitive grant,
24 our intent at that time was to get money to contribute
25 to this study.

1 MR. ETTEMA: Okay. And does the study -- the
2 study that you've requested, is that in line with the
3 recovery plan? I'd looked through that and saw that
4 there was a genetics item for the Tuolumne River in the
5 table. Is that -- that study will fulfill that item? I
6 can't recall the table number, but if you go to the
7 Tuolumne River, you know, specific actions, it's on the
8 list, the genetics study. And I'm wondering if that's
9 the same genetic study that's proposed here or if
10 there's a different --

11 MR. HOLLEY: I think it is. I have the table
12 up right here.

13 MR. ETTEMA: Yeah.

14 MR. HOLLEY: It says: "Evaluate Tuolumne River
15 O. mykiss genetics to inform management in anadromous
16 reaches as well as planning for potential reintroduction
17 for the upper river."

18 So I think our study that we proposed here
19 would be conducted would fulfill that purpose that is
20 called for in the recovery plan.

21 MR. WOOSTER: When I drafted the proposal for
22 the money that we've received I didn't cite the recovery
23 plan. I specifically cited the FERC project and the
24 project effects, attempting to evaluate the project
25 effects on the Tuolumne River population.

1 MR. ETTEMA: Okay.

2 MR. WOOSTER: I think Tom's right. It seems
3 like it would serve dual purposes.

4 MR. ETTEMA: I was just curious, because the
5 cost, I think, was estimated at -- it was lower, I
6 think, than this one.

7 MR. HOLLEY: Yeah. This was also done a couple
8 years ago, too.

9 MR. ETTEMA: Yeah.

10 MR. HOLLEY: We have more information now.

11 MR. ETTEMA: Okay. I want to circle back. We
12 talked about samples. Going back to methodology above
13 the dam, above La Grange, Don Pedro, what about below?
14 Do you have an idea of where and how many samples?

15 MR. WOOSTER: Well, the lower river is pretty
16 much controlled by the -- there's really few fish, so
17 it's kind of as many samples as you can get your hands
18 on, by whatever means.

19 If you can design a program to -- the limiting
20 factor there is simply going to be the low population,
21 so I think you'd have -- I know that the Districts have
22 proposed and put in a couple weirs as part of their
23 studies. There might be some potential to get samples
24 there.

25 So, you know, I don't have a great handle on

1 exactly how many samples. If you're trying to run the
2 cost of how many samples you'd collect, I'm not sure
3 about that. But again, I think you're going to want
4 25 to 50 samples ideally to characterize each spatial
5 and temporal aspect.

6 MR. ETTEMA: Okay. Any other questions from
7 the Panel?

8 MR. AMBROSE: I just keep coming back to -- I
9 don't know if this is a question so much, but I just
10 keep coming back to using money and using it wisely.

11 And, Larry, from what you talked about earlier,
12 you stated that there's a potential for genetics studies
13 to either lead to a recommendation for fish passage or
14 not; correct?

15 MR. THOMPSON: Mm-hmm.

16 MR. AMBROSE: And that would be based on
17 genetics. For \$150,000. And that, to me, seems like a
18 really important question to answer before asking the
19 Districts to pay a million dollars for a fish-passage
20 feasibility study. And so that just seems like a real
21 key and fundamental question.

22 And I -- in having worked on a project in the
23 Pajaro River in Santa Clara County, this is something
24 that came up before, where we had O. mykiss above a dam
25 and we had steelhead below, and there was a -- and the

1 steelhead above the dam were of the -- one of the few
2 remnant populations of O. mykiss left in the Pajaro
3 River. Fish below the dam were of hatchery origin. We
4 made a decision not to move forward with fish passage as
5 part of the Santa Clara Valley Habitat Conservation
6 Plan.

7 So it seems like a real fundamental piece here.
8 And I'm just wrestling with, you know, FERC's decision
9 to not move forward with that.

10 And one of the questions I asked earlier was:
11 Is this a FERC policy decision? You mentioned that
12 looking at previous decisions in regard to genetics and
13 that FERC has not required those.

14 Is that a policy of FERC not to move forward
15 with genetics-type studies or is it on a case-by-case
16 basis?

17 MR. HASTREITER: It's a case-by-case basis.

18 You know, Larry, I think, commented in one of
19 your filings that he's never seen a written -- or
20 Steve -- FERC policy. But we have discussions among
21 staff concerning all of these study requests. And, you
22 know, essentially we feel that it's more related to a
23 fishery management decision. And that's where we are.

24 And then just commenting on, you know, your
25 timing question, you know, the Districts initially were

1 interested in doing a traditional licensing process,
2 which would, okay, versus an integrated licensing
3 process, which is what we are doing, and that's on very
4 tight time frames and decision points. It doesn't allow
5 the sort of thing that you're suggesting, which John
6 already pointed out, that they have to be done together.
7 The Districts were interested in doing the TLP. That
8 may allow for that sort of sequencing. However,
9 National Marine Fisheries Service and others did not
10 want the Districts to use the traditional licensing
11 process. So, you know, there was an option maybe for
12 that sort of sequencing, but National Marine Fisheries
13 Service didn't go that way.

14 MR. AMBROSE: Thank you.

15 MR. THOMPSON: Can I just ask Jim?

16 So I think what I heard, there is no written
17 FERC policy regarding genetics study that you can
18 provide to the Panel; right?

19 MR. HASTREITER: Right.

20 MR. THOMPSON: But you mentioned that there are
21 internal discussions that you have. Are there any notes
22 from those or anything that you could provide us in
23 addition to this single paragraph on page B-18 of the
24 study plan?

25 MR. HASTREITER: No.

1 MR. THOMPSON: I'm sensing that that's what
2 they're struggling with. You're simply saying you
3 consider the research effort, and it may be needed to
4 make the fishery management decisions, but not for the
5 development of license conditions. And that's really
6 terse. And you also refer to another project and the
7 decision made in that docket, in that licensing process,
8 which was -- is different, as you said, circumstances,
9 you look at this on a case-by-case basis. Is there any
10 case-by-case information you can give us here?

11 MR. HASTREITER: No. Those discussions are,
12 you know, not for public consumption when we make those
13 sorts of decisions.

14 And I don't think the Panel's struggling with
15 our decision, Larry. I think it's National Marine
16 Fisheries Service. And, you know, I've already stated
17 our case and our justification for why we made those
18 decisions, so it is what it is.

19 MR. CRAVEN: Did you say the Panel is not
20 struggling with that?

21 MR. HASTREITER: Well, NMFS asked for the
22 dispute, so . . .

23 MR. CRAVEN: Yeah.

24 MR. THOMPSON: Richard, are you saying you're
25 struggling? I think you're struggling with how this

1 information would not develop -- would not be used to
2 develop license conditions.

3 MR. HASTREITER: Well, I'm glad you're helping
4 the Panel make their mind up, Larry.

5 MR. CRAVEN: Let me write that down.

6 MR. HASTREITER: Very good.

7 MR. THOMPSON: Well, let's hear from the Panel.
8 Are you struggling?

9 MR. ETTEMA: The Panel will not discuss its
10 thinking at this time. We will provide our
11 recommendations in a filing in a few weeks.

12 MR. HASTREITER: These are never easy
13 decisions.

14 MR. ETTEMA: Right.

15 MR. HASTREITER: There's a lot of information,
16 a lot of policy. There's a lot of history. It's a
17 tough decision.

18 MR. THOMPSON: Which can't be -- policy which
19 cannot be provided to the Panel.

20 MR. DEVINE: Well, I'm not sure it's a policy
21 question. Maybe it is, maybe it isn't. It's way beyond
22 even the Districts. But there is going to be a large
23 amount of information developed on the record and for
24 the record with respect to fish passage at La Grange and
25 Don Pedro by virtue of the study that the Districts have

1 proposed and that FERC has approved. And it will deal
2 with many, many aspects of whether fish passage at
3 La Grange and Don Pedro is feasible, and it will look at
4 different options for fish passage: volitional,
5 nonvolitional, downstream passage options, upstream
6 passage options. And all of this will be in
7 collaborations with NMFS and other agencies and
8 licensing participants. And that is what FERC will use
9 to base, on the record, their decision on whether fish
10 passage is feasible.

11 If fish passage is judged to be feasible from
12 that perspective, then that will be -- you know, from
13 that perspective of FERC's, separate from NMFS' views
14 and NMFS' studies of the need for fish passage to
15 accomplish its goals related to the recovery plan.

16 Fish will have -- NMFS will have -- FERC will
17 have a large amount of information to decide whether
18 fish passage is important and justified on the record
19 and in the public interest from the record that's
20 developed just by the studies that are proposed.

21 MR. ETTEMA: Okay. Thanks.

22 We are at 12:15 right now. Now, I have an item
23 on the agenda for additional questions or comments, and
24 part of this section and part of this item is for
25 members or the observers in the back. If there is

1 anyone that would like to propose a comment that's
2 related to the study criteria or any bit of information,
3 we have a little bit of time, I would allow a handful of
4 comments. A show of hands. Does anyone wish to provide
5 a comment? One person.

6 Okay. Please, sir, if you could stand up and
7 state your name for the record and . . .

8 MR. SHUTES: I'll come forward.

9 My name is Chris Shutes. I'm the FERC projects
10 director for the California Sport Fishing Protection
11 Alliance. I'm also here today in part representing the
12 California Hydropower Reform Coalition, of which I'm
13 vice-chair.

14 I'd like to speak principally to the question
15 about whether the information required is required for
16 the needs of FERC or for the needs of the agency, NMFS,
17 or both.

18 It seems to me, first of all, in order to have
19 a study dispute process, in order to get in the door, it
20 has to be a mandatory license -- mandatory conditioning
21 agency which asks for the study dispute process, and it
22 must, in doing so, justify why its authority would be
23 used or how it's affected in order to actually meet the
24 qualifications or the bar for the study -- or for the
25 dispute.

1 Mr. Hastreiter said in his comments that
2 basically NMFS has the lead on fish passage, so it seems
3 to me that in some regard the Commission tends, by
4 practice and by policy, to delegate responsibility for
5 fish passage to NMFS as the lead on that particular
6 issue.

7 However, under the Federal Power Act the
8 Commission is responsible to produce a license that is
9 in the public interest. And certainly, part of the
10 public interest has to do with fish passage.

11 If the Commission decides to delegate that
12 portion of the public interest to NMFS as the lead,
13 that's the Commission's decision, but still, it is
14 responsible, under its public interest requirements, to
15 make sure that the license -- the information collected
16 and the license issued meets the bar that it's required
17 to meet according to the Federal Power Act.

18 It seems to me that there's this sort of
19 procedural trap that's set up for NMFS, because they, on
20 the one hand, have to say how it would -- how their
21 authority is affected in order to get in the door, but
22 then there's the contrary position that the information
23 would be used for NMFS' information and edification and
24 not for that of the Commission as a whole.

25 It sounds to me like either the determination

1 that there's no public interest in fish passage in this
2 proceeding is predecisional or that there is -- there
3 needs to be some accommodation made for NMFS to take on
4 that aspect of the public interest.

5 And I would say that there is clearly a public
6 interest in fish passage in the state of California and
7 rim dams, at rim dams in the Central Valley.

8 In 19 -- in 2014, 95 percent of the winter-run
9 Chinook downstream of Lake Shasta were believed to have
10 perished because conditions downstream of the rim dam
11 there were not sufficient to maintain conditions that
12 allowed them to live.

13 The total survival of spring-run Chinook in
14 2014 in California was estimated at around 7,000 fish
15 total escapement.

16 It seems to me that it is at least arguable
17 that from the point of view of FERC there is a
18 significant public interest in examining and considering
19 fish passage from the point of view of the Commission as
20 well as whatever NMFS' planning and recovery
21 responsibility may be.

22 I think you, as Panel members, although you're
23 not cast with deciding policy or law, effectively the
24 entry in the door argument made by the Districts and
25 made in their comments that were issued before the study

1 dispute process, before the Panel was convened, seek to
2 persuade you that there's no obligation on the part of
3 FERC to order a study. And while there's no obligation,
4 there is an opportunity, and there's nothing that says
5 that FERC can't do that. And I'd say that there's a
6 greater obligation in protecting the public interest for
7 you to take it on and consider it.

8 We're going to file comments on these issues in
9 response to this proceeding, because we think it has
10 general policy applications.

11 In the real world I agree with Mr. Thompson
12 that most of the time when it comes to the other
13 mandatory conditioning agencies FERC doesn't make a
14 distinction between whether it needs the information or
15 the agencies need the information; and particularly, I
16 would add, when there's agreement between the agencies
17 and the licensee, FERC doesn't make that distinction, as
18 there was in the case of the study that we're not
19 talking about today, the habitat study.

20 So I think that what we're dealing with here
21 goes to broader policy, and you all need to think about
22 this in terms other simply than whether there's an
23 obligation of the Commission to order a study simply for
24 the benefit of this agency.

25 Thank you very much.

1 MR. ETTEMA: Okay. Thank you for your
2 comments.

3 All right. If there are no other pressing
4 questions -- you have one from John.

5 MR. DEVINE: Could I just comment on that?

6 MR. ETTEMA: Sure, you can provide comments.

7 MR. DEVINE: If you could respond to the public
8 interest, because they require the Districts to do the
9 fish-passage study.

10 MR. HASTREITER: My only comment is, you know,
11 apparently Chris misunderstood. I don't think we said
12 FERC is delegating fish-passage responsibility to NMFS.
13 I think what we did say is it's NMFS' responsibility to
14 make decisions about reintroduction --

15 MR. ETTEMA: Okay.

16 MR. HASTREITER: -- which, from our
17 perspective, is a different matter.

18 MR. ETTEMA: Okay. We have a little bit of
19 time here, so if you have another question?

20 MR. THOMPSON: I mean, reintroduction can be
21 fish passage. I mean, I think -- Jim, are you making a
22 distinction between a reintroduction that happens due to
23 fish-passage license conditions on a FERC project and
24 another type of reintroduction? Because we want to be
25 clear, we're -- the reintroduction we're talking about

1 here and we came here to dispute, a study that would
2 inform that, is for a license condition at the project
3 for fish passage. That -- that is the reintroduction
4 that we're contemplating.

5 MR. HASTREITER: Right.

6 MR. THOMPSON: Is there a distinction?

7 MR. HASTREITER: No. It's a sequencing. And
8 that's what I said early on, that National Marine
9 Fisheries Service needs to make a decision whether
10 reintroducing fish into the upper basin is in the best
11 interest of the recovery plan, whatever your intentions
12 are. Once you make that decision, then you will make a
13 decision on whether you're going to submit a Section 18
14 prescription. It's a sequencing.

15 MR. THOMPSON: And my only response would be,
16 we start by requesting a study to inform that decision.
17 And that certainly seems like a logical thing to do.

18 MR. HASTREITER: Which is your responsibility.
19 Right.

20 MR. ETTEMA: Thank you.

21 MS. REED: Can I make a comment? And I'll come
22 up so the thing can be recorded.

23 I do want -- I know that Steve has mentioned
24 this, and I'm not a FERC expert, but I do -- my
25 authorities within NMFS do focus on the Endangered

1 Species Act. Steve did mention Section 7(a)(1) of the
2 Endangered Species Act, which is -- you tend to talk
3 about Section 7 as being a process for consulting after
4 a project description has been defined in terms of how
5 the agency -- how NMFS can assure that the agency is
6 going to complete the project and the purposes of what
7 you're trying to do in a manner that does not jeopardize
8 the continued existence, survival, and recovery of the
9 species.

10 The Section 7(a)(1) very clearly identifies
11 that NMFS has a role to work with the agencies to look
12 at the programs administered by that agency and to -- it
13 says: "All other federal agencies" -- which would
14 include FERC -- "shall, in consultation with and with
15 the assistance of the Secretary" -- in this case
16 Commerce, NMFS -- "utilize their authority conferred on
17 them for the purposes of this Act" -- the Endangered
18 Species Act -- "by carrying out programs for the
19 conservation of endangered species and threatened
20 species listed pursuant to Section 4 of this Act."

21 So I think there seems to be in this process a
22 bit of a push-pull about whose job it is to make this
23 passage determination. And I think the FERC process may
24 have some lines that you're trying to draw some fairly
25 firm lines in the sand, but I think the point that our

1 team is trying to make is that you're also dealing with
2 the Endangered Species Act. And FERC has
3 responsibilities and authorities there to work in
4 concert with. We are here to consult and to assist FERC
5 in making that decision.

6 And I think one of the questions that John may
7 have asked earlier was, would this genetic information
8 lead to a decision that would say you would not
9 recommend passage. And I think the answer to what was
10 it could. That is the type of information that could be
11 developed from the genetic information.

12 So I think that might be something that FERC
13 would want to consider, maybe going to Jon Ambrose'
14 question about -- too many Johns in the room.

15 MR. AMBROSE: There are.

16 MS. REED: And is kind of what is the series of
17 information that you need to get, you know, is the
18 habitat stuff more important than the genetics or the
19 genetics -- give you that information first perhaps with
20 the FERC timelines and the prescriptive time window that
21 we have, maybe it is more judicious to look at getting
22 this information all at once, because that's when you
23 have to make the decision.

24 So that's -- I hope that's helpful and maybe
25 does put the context and the role of the federal

1 agencies in both a FERC and ESA context.

2 MR. ETTEMA: Okay. Thank you. And we'll --

3 MR. WOOSTER: Time for one quick --

4 MR. ETTEMA: Very quick.

5 MR. WOOSTER: Okay. This was -- I know Jon
6 Ambrose has had some -- the math didn't quite work, the
7 150 here and the million for the fish-passage
8 feasibility.

9 I just wanted to point out that the way the
10 Districts crafted their fish-passage feasibility study,
11 there's a lot more in there than just fish passage.
12 There's evaluations of stranding risks by the
13 powerhouse, powerhouse entrainment, some other kinds of
14 environmental conditions that, you know, a survey near
15 the powerhouse, putting in some weirs that count fish
16 coming up. So it's -- the balance there, I don't know
17 if you have a breakdown of what portion of that study
18 was for the fish-passage part, but it's not quite 150 to
19 a million. There's a lot wrapped in that million, as I
20 understand it.

21 MR. DEVINE: I just want to -- it's all in the
22 study plan.

23 MR. HASTREITER: It's a comprehensive plan.

24 MR. WOOSTER: It's a big plan.

25 MR. DEVINE: It's in the revised study plan. I

1 wouldn't want to draw any -- just take a look at that
2 and that breaks it down.

3 MR. ETTEMA: Okay. That brings us to closing
4 statements. I assume folks want to make those or -- who
5 would like to go first?

6 MR. DEVINE: We just want to thank the Panel
7 for conducting the meeting, and we appreciate the
8 opportunity to participate.

9 MR. ETTEMA: Okay.

10 MR. HASTREITER: I would like to echo the same,
11 and I'm sorry you have to deal with this perplexing
12 matter, but I'm sure you'll make a wise decision. Thank
13 you.

14 MR. EDMONDSON: I defer to Larry for our
15 closing statement, but I want to thank everybody for
16 coming out. And it's -- NMFS really does appreciate --
17 and the Panel. It's a lot of work and a lot of hours,
18 and it's in our interest. And that's -- you know, we
19 really appreciate that. And thanks for everyone coming
20 out here.

21 And also, I don't know if folks noticed, this
22 is very professional, very well run, and I think that
23 some of the issues got contentious or potentially could
24 have become, I don't know, unprofessional, but folks
25 maintained professional posture, and I thought it went

1 really well, so thanks to everybody.

2 MR. ETTEMA: Larry.

3 MR. THOMPSON: Sure. I mean, I think I'd just
4 like to say what -- again, thank the Panel, as others
5 have, and point out that what we've done here today, we
6 think we came and we explained the project effect, that
7 is, the gene-flow barrier effect of La Grange Dam. We
8 explained that that effect was on O. mykiss and the
9 genetic makeup of that species. That's what the
10 regulations require.

11 We also explained how the genetics information
12 would inform a fish passage license condition. That is
13 also something that Regulation 5.9(b)(5) requires us to
14 do and we did that. They would inform the development.
15 So you've got to start somewhere and you need to develop
16 license conditions. This is information to inform that
17 development. We think that's pretty clear.

18 When I -- I was a panelist at one time, so I
19 know the job that the Panel has now facing it. I sat in
20 Jon Ambrose' chair for one of these FERC projects. I
21 was the agency panelist, and so I'm familiar with the
22 regulations at Section 514(k) which tells you what you
23 have to do now. And you -- the regulations say you
24 shall make and deliver to the Director of the Office of
25 Energy Projects a finding with respect to each

1 information or study request in dispute -- we only had
2 one here -- concerning the extent to which criteria set
3 forth in Section 5.9(b) is met or not met and why, and
4 then make a recommendation regarding the dispute request
5 based on that finding.

6 So it's not an easy job, but it's pretty clear.
7 And I'm reading that because there was a lot of
8 discussion here today about who's responsible for
9 collecting the information, but I do not find that
10 anywhere in Section 5.9(b). I think that's an issue
11 that has been discussed here, but it's not in the
12 regulations and it's not what the regulations chart you
13 with evaluating. And I think that's pretty clear.

14 So again, thanks. And I agree with Steve. It
15 gets a little contentious. I hope it was professional.
16 And I thank Richard and Jon and Nick. Thank you very
17 much.

18 MR. HASTREITER: I just want to follow up,
19 because Larry mentioned he was on a panel and it's very
20 tough. And the Panel that Larry was on, the other two
21 panelists agreed on measures which Larry would not agree
22 to, and the two panelists submitted their findings and
23 Larry submitted separate findings because he didn't
24 agree with the other two panelists.

25 So it's not an easy job. It's very difficult.

1 And sometimes it just comes from the perspective that
2 you start with and what your job is. So good luck.

3 MR. THOMPSON: But in response to that, there
4 were some 17 -- there were some 17 studies, Jim, and
5 more than one agency involved, so agreeing on all 17
6 with several study elements within each study.

7 MR. HASTREITER: It's been the only case where
8 that has happened. It's tough.

9 MR. THOMPSON: It was pretty difficult.

10 MR. HASTREITER: Yeah.

11 MR. ETTEMA: All right. Well, thanks,
12 everybody for coming out.

13 I'm going to move on to next steps, sort of go
14 over the timeline here.

15 So now the Panel -- we will enter into
16 deliberations. We're going to be talking about this
17 over the next few weeks. The date I have here is -- for
18 our recommendations to go to the Director is April 14th.

19 And we spoke earlier this morning about
20 potential filings or comments that may be filed, and if
21 anyone would like for us to consider any further
22 comments or provide any filings -- we talked about the
23 five-year review, the Lindley, et al., paper and the
24 study plan or report on the American River, I think we
25 talked about --

1 MR. WOOSTER: I'm not sure how much is
2 available.

3 MR. ETTEMA: Okay.

4 MR. WOOSTER: The American River is very much a
5 study in progress.

6 MR. ETTEMA: Okay. There may have been a few
7 others, but that's what I noted here at the end as far
8 as filing.

9 MR. DEVINE: Would you like to write down the
10 costs?

11 MR. ETTEMA: I think that's already -- that
12 would already be on the record for the fish-passage
13 study.

14 MR. DEVINE: I believe so. But if it's not
15 adequate for your needs, then let us know.

16 MR. ETTEMA: Okay. We can do that. So if you
17 would like to submit additional comments, or as far as
18 submitting these other papers, we'd ask that you submit
19 them by close of business April 7th, and that would be
20 FERC headquarters' close of business, so 5:00 p.m.
21 Eastern time. Other than that --

22 MR. THOMPSON: Just for clarification, were you
23 going to send -- like, put something out, a request,
24 itemizing what you're requesting, sort of like you did
25 last time, or should we just --

1 MR. ETTEMA: I won't be doing any further
2 requests. You know, I've requested that five-year
3 review and the Lindley, et al., paper today.

4 MR. THOMPSON: Okay.

5 MR. ETTEMA: And, you know, you've suggested
6 filing that study report. Based on the comments made, I
7 think that would be -- I think that would be prudent to
8 file the American River study plan or study report.

9 MR. THOMPSON: Okay.

10 MR. ETTEMA: And yeah, as far as what the Panel
11 will consider, I will reiterate that 5.9(b) will be the
12 cornerstone of our -- we will follow the regulations.
13 Richard, Jon, and I signed the Expectation of the Panel
14 this morning and we've adhered to the guidelines since
15 the beginning of this process and will continue to do
16 so.

17 After we submit our recommendations, I have
18 here the Commission -- or the Director will issue its
19 decision on May 4th, 2015, is the time limit we've come
20 up with, so -- and I'd like to remind everybody that the
21 Commission has an open, you know, comment strategy. You
22 can file comments at any time. If you want us to
23 consider your comments, I'm asking that they be
24 submitted by next Tuesday. If there's other comments
25 that you would like the Commission to consider as it

1 considers the Panel's recommendations, you can go ahead
2 and file comments after that date as well.

3 All right. With that I'll thank everyone for
4 coming out. I think everyone conducted themselves very
5 professionally, and it was a productive meeting. So
6 thank you for your time and for your input.

7 (Time noted: 12:40 p.m.)

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