STUDY DISPUTE RESOLUTION PANEL

TECHNICAL MEETING

RE: YUBA RIVER HYDROELECTRIC PROJECT NO. 2246

WEDNESDAY, NOVEMBER 30, 2011

9:00 A.M. - 5:00 P.M.

HELD AT:

HOLIDAY INN CAPITOL PLAZA

300 J STREET

SACRAMENTO, CALIFORNIA

REPORTED BY: CAROLE W. BROWNE

RPR, CSR NO. 7351

PANEL MEMBERS

STEPHEN BOWLER
Federal Energy Regulatory Commission

DAVID WHITE
National Marine Fisheries Service

RICHARD CRAVEN
Independent, Third-Party Panel Member

ALSO PARTICIPATING:
FEDERAL ENERGY REGULATORY Commission:
Alan Mitchnick
Ken Hogan
Joe Hassell

NATIONAL MARINE FISHERIES SERVICE:

Larry Thompson
Rick Wantuck
John Wooster
Tom Holley

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION:

Kathryn Kempton, Attorney-Advisor

YUBA COUNTY WATER AGENCY:
Curt Aikens
Geoff Rabone
Alan Lilly, Attorney at Law
James Lynch, HDR/YCWA
Paul Bratovich, HDR/YCWA
Tom Johnson, Consultant

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Wednesday, November 30, 2011, Sacramento, California

9:04 a.m. - 4:58 p.m.

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PROCEEDINGS

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MR. BOWLER: I'd like to go ahead and open the meeting. I'm going to start by reading an opening statement that the panel has developed and agreed to and then we'll go through some of the details of the day and then we'll get started with some questions and a review of -- probably start with what's still on the table and what's off the table. So at this point I'll start with the opening statement.

The technical meeting of the dispute resolution panel for a study dispute filed by National Marine Fisheries Service in the Yuba River Hydroelectric Project relicensing proceeding is now open. I'm Stephen Bowler, the Federal Energy Regulatory Commission's representative to the dispute resolution panel and the panel chair. The other panelists, whom I will introduce in more detail shortly, are David White, NMFS representative, and Richard Craven, the independent, third party member of the panel. The dispute regards what studies are required in the preparation of an

application for a new license, aka relicense, by the Yuba County Water Agency.

The purpose of the meeting today is for the dispute resolution panel to gather the information it needs to make a finding, "with respect to each information or Study Request in dispute, concerning the extent to which each criteria set forth in Section 5.9(b) of the regulations is met or not met, and why, and make recommendations regarding the dispute study based on its findings." Section 5.9(b) refers to the section of the Commission's regulations that lists the criteria for studies necessary to prepare a license application. And that's available as a handout here today. It's a two-sided handout.

We are a panel of three. None of us have had any involvement in the Yuba River Hydroelectric Project prior to our role on this panel. David and I were appointed by our agencies. Our first task was to select and recruit Richard from the resumes of potential third-party panelists on the Commission's website.

Richard has worked on water resource projects as an environmental consultant for over 30 years. His project experience includes preparation of numerous environmental documents, biological assessments, and FERC applications. He's quite familiar with working

with resolution of complex issues.

His technical background covers instream flows, fish passage, fish screening, sediment and temperature modeling, and more. He has served on the Oregon Fish Passage and Fish Screen Task Forces. Richard has signed a statement declaring he has no conflict of interest with this proceeding, which has been filed in the public record.

David has extensive background in salmon rearing and passage and is trained as a fish passage engineer and has worked for NMFS for nine years. I've worked with the Commission for six years. All three of us have master's degrees in fields closely related to the dispute.

We were convened as a panel officially on November 7th, 2011 and have been working very hard since to prepare. All three of us have signed on to the expectations of the dispute resolution panel, and copies of that are on the other side of the Section 5.9(b).

The dispute filing raises issues both of broad policy and technical detail. In approaching our task, we have carefully assessed our role. The regulations make it clear that our recommendations are to be based upon "criteria set forth in Section 5.9(b)."

Further, when considering our recommendations,

the Director's determination, the Director takes our recommendations and makes a decision based on them, will be made with reference to the study criteria set forth in 5.9(b) and any applicable law or Commission policies or practices.

The panel's role is to develop technical recommendations. To the degree that our review of the dispute requires us to consider technical matters in the context of policy and practice, our findings and recommendations must rest in the context of existing Commission policy and practice within which the Director will consider them.

A practical implication of the panel's understanding of its role is that we will not focus nor make findings or recommendations on the issue of whether the Narrows 2 facility is a barrier to the passage of fish from below to above Englebright Dam. This issue is one of policy and law that clearly is beyond the intended scope of the dispute panel process.

That said, there is a great deal of ground we have to cover today. The panel has designed the meeting format in the following ways to gather the information we need most in the time that we have.

We have committed to NMFS and the Commission, as parties to the dispute, and to the Water Agency, Yuba

County Water Agency, as the applicant who will carry out the studies, that we will give them each time at the end of the day for a closing statement, if they wish to use it. If we have time, we'll give others the opportunity to make additional comments as well.

We have a tight schedule, so if we're falling behind we'll defer some issues to the end of the day. We've left some time there to revisit them.

And we reiterate the importance of sticking with the criteria and to this project. We ask that everyone be as concise and focused as possible. Of course, we expect everyone to be treated with respect.

We will take a couple breaks during the day. The restrooms are to the right, out this door to the right.

The meeting is being recorded by a court reporter, Carole, so please, the first few times that you speak a number of times give your name and affiliation. If you have a name that's difficult, unusual spelling or uncommon, please spell it out.

This record will be ultimately in the public record, the transcript.

There's a sign-in sheet at the water table, if you would please sign in.

And I think we're a small enough group that if

we can take a tour around the room and just ask people's name and affiliation quickly so we get a sense of who's here, after which David and Richard will describe a little bit more about the day and we'll get started.

Why don't we start over in that corner?

MR. FECLE: Andrew Fecle, Placer County Water Agency.

MR. STUDLEY: Tom Studley, PG&E.

MR. WALSH: John Walsh, PG&E.

MS. ABRAMS: Jennifer Abrams, PG&E.

MS. RICHARDSON: Mary Richardson, PG&E.

MR. PEIRANO: Steve Peirano, PG&E.

MR. WHITE: Rick White, taxpayer.

MS. WHITE: Kay White taxpayer.

MS. SACKHEIM: Kelly Sackheim, I'm a concerned hydro developer.

MR. HASSELL: Joe Hassell, FERC staff.

MR. MITCHNICK: Alan Mitchnick, FERC project coordinator.

MR. HOGAN: Ken Hogan, FERC fishery biologist.

MR. LYNCH: Jim Lynch, HDR, consultant to YCWA.

I would like to add that Curt Aikens, the general manager, and Geoff Rabone, assistant general manager, are on their way and will be here in a few minutes.

MR. LILLY: Alan Lilly, attorney for Yuba County Water Agency.

MR. BRATOVICH: Paul Bratovich, HDR consultant to Yuba County Water Agency.

MR. WOOSTER: John Wooster, National Marine Fisheries Service, hydrologist.

MR. HOLLEY: Tom Holley, hydrologist for the National Marine Fisheries Service.

MS. KEMPTON: Kathryn Kempton, an attorney advisor with NOAA general counsel.

MR. WANTUCK: Rick Wantuck, National Marine Fisheries Service, supervisor of hydropower and bioengineering programs.

MR. THOMPSON: Larry Thompson, fishery biologist, National Marine Fisheries Service, Sacramento.

MR. FOSTER: Bill Foster, National Marine Fisheries Service, biologist.

MS. NELSON: Jennifer Nelson, state water board.

MS. WATTS: Jennifer Watts, state water board.

MR. SHUTES: Chris Shutes, California Sport Fishing Protection Alliance, California hydropower responsibility.

MR. JOHNSON: Brian Johnson, Trout Unlimited.

MR. JOHNSON: Tom Johnson, consultant for YCWA.

MS. MANJI: Annie Manji, California Fish & Game.

MS. STOHRER: Sharon Stohrer, California Department of Fish and Game.

MS. LIND: Amy Lind, Forest Service.

MR. MELANSON: Mike Melanson, Metropolitan Water District, Southern California, representing state water contractor.

MR. BOWLER: Thank you.

MR. CRAVEN: You have the agenda in front of you, I believe. Does everybody have an agenda? Okay.

Basically, the agenda looks fairly innocuous in terms of how the items are listed. As you all know, there's a million elements under each one of these requests in the study.

So basically I think that Stephen will describe in a few minutes how we're going to proceed on those, and I understand there's another submittal this morning. Or maybe it's not a submittal, but another document that's going to be explained, I guess.

And so we're going to start out, you know, at least down the process, we'll start with NMFS No. 1 and start with each element and go through them. And you'll note the time allotted here for NMFS 1 and NMFS 2, and

if we have extra time, if we finish one of these, then maybe there will be additional comments if someone wants to make some, or maybe we'll just continue on with the next disputed item.

And during the end of the day, at the end of the day, if we have time between 4:00 and 4:30, we'll try to revisit some of the partially addressed subjects. I'm guessing we likely won't get through everything, so we may have to cut off some of the discussion on some of the dispute items and hold that until later. Our intent, our objective is to try to get through all of these to some level. And then at 4:30 there will be closing statements.

And, David, you want to take it from there?

MR. WHITE: The general plan for addressing each study request is going to go like this. There are numerous study requests and several of them have numerous elements, and in some cases subelements, so we're going to address them element by element, in order.

The way we're going to approach it is that we will first summarize what we believe NMFS's request is and then we will summarize what we believe the YCWA's proposal is, then also the -- what the FERC determination on the study request is. Then we will

summarize as we understand it what the NMFS dispute is and we will ask you to confirm that we've got those correct, because there are a lot of them, and we've done our best to figure them out, so if you think there's a substantive misunderstanding of where we're going, we're going to ask you to bring that up. And then we'll proceed with our questions for each of you that we've developed in response to those elements.

MR. BOWLER: And the first item on the agenda or part of the first hour is general questions on general issues, and I thought since NMFS has brought some new information which will clarify what is still in dispute and what is not in dispute, that our first question was, which we submitted by e-mail, which will be filed shortly, to the primary participants in the proceeding was, we'd asked them to be prepared today to answer that question, what's still in dispute and what's not. So I thought we'd start by running through it, see what we can take off the list of the agenda for today and what we should keep on.

MR. THOMPSON: Stephen, could I respond to that?

We did receive your e-mail requesting additional information, and thank you for that. We responded with a filing in the FERC record this morning.

Sorry we couldn't get it in sooner, but it was a rush. And we have provided for each of the panelists printed copies of that filing. And the filing is simple, we hope. We tried to make it simple. What it does is it responds to your request. We go through each of our study requests element by element and clarify which are still in dispute and then we try to outline briefly underneath each one the main points why. And so we hope this, you know, assists you as we move forward on this.

One response to Dave is, I like the idea of going through element by element and starting with the NMFS Request 1. That's fine. But I wanted to note the way we laid out our filing today was that we grouped seven elements in Request 1, because they were not handled at all in the proposed or revised study plan. They were dismissed on the basis of several 5.9(b) criteria, predominantly the nexus criteria.

So we just want to let you know we've started out with those elements, described our dispute on those, and then we go back to Element No. 1, 2, 3, et cetera. If that works for the panel, we'll proceed that way.

MR. BOWLER: That works for us. In fact, that's sort of part of what we planned to use the general time for is to go through some of the major request area issues.

MR. THOMPSON: Okay. Now, one more thing. I did -- I had enough time this morning to print a number of copies of what we filed today and I can distribute them around here to the table.

The rest of the information that we provided the panelists in these books is information that's already filed in the record. It is our study request, our comments on scoping, our comments on PAD, our notice of dispute, FERC's study plan determination. I think that's it. I've got a table of contents in the front.

MR. BOWLER: So you've got eight copies or something?

MR. THOMPSON: Yes. I think, NMFS, we already have copies, so our final study plans, et cetera, FERC's study plan determination, yes, they're in order. And for the panelists, there are tabs there so that when we get to that point we'll try to get you to the right information as quickly as we can.

MR. BOWLER: Do we have one more copy up there we can circulate? Okay. If people would pass that along and people can look at it.

UNIDENTIFIED AUDIENCE MEMBER: The table of contents in the binder is the first page and then the rest of that is the filing information this morning, which is point number one on the table of contents.

MR. BOWLER: Can we run through the items, what's in, what's out, and we'll talk about that --

MR. THOMPSON: Okay.

MR. BOWLER: -- first cluster of grouping.

Thank you for responding to our request so thoroughly.

Another request we had sent to the parties, the primary participants, was a request for some more information on the intake at the Narrows 2 facility from the Yuba County Water Agency, and I haven't been in the office since they filed their response, but I have copies here and they will be filed in the public record shortly, so we can pass around -- there's two items here. One is the e-mail request that we made, the heads-up we gave to the participants, and the other is the response from Yuba County Water Agency on their portion of it. So I'm handing out two piles. These will be in the public record shortly. One of them says page 1 of 1 and one of them says page 1 of 3 at the top. Make sure you've got one of each. And thank you, YCWA, for that information.

MR. THOMPSON: Starting off with the NMFS's request number 1, the first page of enclosure A of the filing we had today, we point out that element 6, 9, 10, 11, 12 and 13 are not adopted by the staff of the Office

of Energy Projects. We may call it OEP later. OEP staff. That means Office of Energy Projects with FERC.

We're assuming that these were dismissed by reading the rationale given on the study plan determination, which essentially -- well, we can take a look at that.

It says that these deal with facilities upstream and that there is -- the nexus is questionable to the project.

So what we'd like to do to respond to that is turn your attention to the next page, which contains a table that we filed in our request number 1. And there's a larger version of that table in your -- in the sleeve in the notebook. And we'd like the panel to consider that our request was comprehensive and that this table lists the facilities that we requested information be collected, the locations, the river mile locations from downstream to upstream.

MR. BOWLER: We'll do that.

MR. THOMPSON: We'd really like you to take a look at this and just note that we do have a key on this table to each passage issue at each location, the target species that would be affected at the location, and so it sort of summarizes that for you. Okay?

MR. BOWLER: Yes.

MR. THOMPSON: Thank you.

MR. BOWLER: We'll revisit that after we sort of inventory.

MR. THOMPSON: Okay. So you want to move to Element No. 1?

MR. BOWLER: What I'd like to know is, is there anything else that's -- of the whole list, is there anything else that's off the dispute or --

MR. THOMPSON: No. Remains. Remains on the dispute list.

MR. BOWLER: So on Study Request 1, all the elements are in dispute or just 6, 9, 10 and 11? Or 6, 9, 10 and 11 are grouped together among --

MR. THOMPSON: Yes.

MR. BOWLER: So everything else but 13 is in dispute?

MR. THOMPSON: Yes.

MR. BOWLER: And then on element 2?

MR. THOMPSON: We would turn to page 9 of the filing.

MR. BOWLER: Okay. NMFS request 2.

MR. THOMPSON: It's italicized there. It's element 2, 4, 5, and 6.

MR. BOWLER: 1 and 7 are not in dispute?

MR. THOMPSON: That's correct.

MR. BOWLER: And 3.

MR. THOMPSON: 3, turning over to page 10 is Element No. 1 and number 3.

MS. KEMPTON: Just to keep the record straight, he's talking about Study Request 3?

MR. THOMPSON: Yes. We're moving to -- yes. Because we identified that all of the requests for all of the elements from NMFS Request 1 remain in dispute.

MS. KEMPTON: I understood Mr. Bowler to ask if element 3 of this request 2 is still in dispute.

MR. THOMPSON: No. Thank you.

MR. BOWLER: So we'll recap. On Study Request 2, Elements 2, 4, 5 and 6 are in; Elements 1, 3, and 7 are out.

MR. THOMPSON: Correct.

MR. BOWLER: Now moving on to Request 3.

MR. THOMPSON: Yeah. That's where I got mixed up. That is on the bottom of page 9 and top of page 10, Element No. 1 and element number 3 remain in dispute.

MR. BOWLER: 1 and 3 are in and 2 is out.

MR. THOMPSON: Correct.

MR. BOWLER: Okay. Request 4.

MR. THOMPSON: Yes. That's Element No. 1, number 4, number 6 remain in dispute.

MR. BOWLER: Out are 2, 5 -- 2, 3 and 5.

MR. THOMPSON: Correct.

MR. BOWLER: Okay. Request 5.

MR. THOMPSON: Request 5, elements 2, 3, 4 remain in dispute.

MR. BOWLER: So 1 is out.

MR. THOMPSON: Correct.

MR. BOWLER: And then Study Request 6.

MR. THOMPSON: All seven elements were not adopted and remain in dispute.

MR. BOWLER: Seven?

MR. THOMPSON: Seven. We do not dispute request 7 at all. It was missing and it created some confusion. It was missing, but we didn't dispute it.

MR. BOWLER: That's what we interpreted, but we wanted to be sure.

MR. THOMPSON: Sure. Thank you.

MR. BOWLER: And Study Request 8.

MR. THOMPSON: For 8, element -- elements 1, 2, 3, 4, 5, 6, and 7 remain in dispute.

MR. BOWLER: Is that all that are not --

MR. THOMPSON: Yes.

MR. BOWLER: So all of them, 1 through 7. All right.

MR. CRAVEN: Excuse me. Back on request number 2, is 2, 4, 5 and --

MR. BOWLER: And 6.

MR. CRAVEN: -- and 6? And 7 is not in dispute?

MR. BOWLER: Seven is not.

MR. THOMPSON: John Wooster of NMFS has raised an issue in that there has been some progress on Requests 4 and 5.

Is that correct, John?

MR. WOOSTER: That's correct.

MR. THOMPSON: NMFS Request 4 and 5 have had some progress made since we filed our notice of dispute, and John was asking if the panel would want to hear about that at this time.

MR. BOWLER: Is it going to affect whether we have to cover them later or not?

MR. WOOSTER: I think they could be potential timesavers if there's -- if we're running short on time and we don't need to devote a lot of time to studies 4 and 5.

MR. BOWLER: Why don't we do that now, add it to our inventory? Go ahead.

MR. WOOSTER: So since we filed our dispute, I've worked with FERC and YCWA over multiple conference calls and e-mails and I think we're pretty close to a resolution on all the elements that are listed in

studies 4 and 5.

As part of the filing that we put on the record this morning, that's also in your binder, there's some attachments that would describe language that, if accepted in the determination, NMFS would consider the dispute resolved.

There's three attachments. One is language updating -- additional language for Study Request No. 4 and then something similar for Study Request No. 5, additional language, and there's also a map, attachment 3, that depicts general large woody debris sampling areas. That map was something that I created and YCWA filed on the record.

MS. KEMPTON: John, is that enclosure C, attachment 1?

MR. THOMPSON: It's in enclosure -- for clarity, it is in enclosure C of today's filing.

MR. BOWLER: Okay.

MR. WOOSTER: Yes. It's in your handout here.

This map was filed. Curt Aikens put a letter together saying that YCWA supported the general sampling plan of the woody debris sites provided to resolve the study dispute. And the language that's in here is language that's been reviewed by FERC staff, YCWA had comments on.

MR. BOWLER: Go ahead.

MR. MITCHNICK: OEP staff is prepared to go to the Office Director recommending that the study plan be modified to include the agreed-upon on these two studies, so, you know, as soon as this meeting is over we will start putting together basically a letter summarizing what has happened and concurrently provide a study plan modification, assuming that the Office Director would buy in on the staff recommendation.

MR. BOWLER: So assuming the Office Director accepts the recommendation, everybody is comfortable with the language that's in this enclosure.

MR. LYNCH: It's identical to what we had.

MR. WOOSTER: It's what Ken had sent out.

MR. LYNCH: It would be.

MR. BOWLER: So it sounds like, unless we have extra time, which we might not, is there a need on anybody's part to discuss any of it here? It sounds like if you've done the work we don't need to mess with it.

MR. WOOSTER: I think that's fair.

MR. BOWLER: So we'll take 4 and 5 off of the agenda. We've made a lot of progress already.

MR. THOMPSON: The dispute process is not necessarily a bad thing. I just want to point out that

since filing the dispute we've made progress there on the studies and we have some resolution. Thank you for FERC's involvement and to the applicant for working with us.

MR. BOWLER: Thank you all for taking some stuff off our plates and for making progress.

At this point we'd like to hear your points on the sort of cluster of studies that fall under that one theme.

MR. THOMPSON: Right. So it appears to us that -- to NMFS -- Larry Thompson, NMFS -- that element 6, 7, 9, 10, 11, 12 and 13 were not adopted by the staff of the OEP and they really didn't provide us what we call an itemized rationale on those studies, on those requests.

The logic appears, in our view, on page 39 of the FERC study plan determination where OEP staff states specifically we find that some of the information sought in elements 1 through 4 and 8 may be appropriate for further analysis. So that, therefore, eliminated the ones we're talking about here. To clear things up, there was no element 5.

MR. BOWLER: Okay.

MR. THOMPSON: It was a numbering error. So that's why 5 is not there. We inadvertently skipped

from 4 to 6.

So I mentioned to the panelists at this table and I want to point out that those clustered elements that were not adopted are requested by NMFS so that we can get a comprehensive evaluation of the fish passage effects throughout the watershed, where project facilities or facilities that are affected by the project operations could affect anadromous fish passage. And so we went over this before. Call your attention to it. You can see the facilities are labeled, some are, some are not project facilities, many are, and the issues NMFS authorities the target species that would likely be affected in those areas, and these include areas of both the Lower Yuba River and the Upper Yuba River. The Upper Yuba River is usually described as the area above Englebright Dam for purposes of simplicity.

So we'd like to call your attention to this table. We're continuing to dispute those clustered elements because the project effects and the effects on anadromous fish passage at all these locations will not be adequately evaluated unless those are implemented.

Now, the logic that we understand from the other side is that the anadromous fish aren't present there now. It is true they don't inhabit the Upper Yuba.

What we've provided for you, beginning on page 3, is a list of nine actions that we think are reasonably foreseeable actions that could place anadromous fish in those areas and therefore affected by the project facilities.

So the fact that the fish aren't there now doesn't seem to be the point NMFS is accepting. We're saying, over the license term, even in some instances during this licensing proceeding, it's likely that actions could occur that would place fish there. Thus, we need to evaluate the effects of the projects, the fish passage effects of those projects.

And I don't know if you want me to read through these, but just briefly, NMFS has a public draft recovery plan for Sacramento River winter-run Chinook, spring-run Chinook in the Central Valley and Central Valley steelhead. The spring-run Chinook and Central Valley steelhead are present now in the Lower Yuba. Could be reintroduced in the Upper Yuba.

We point out that the recovery plan, the draft plan itself has scenarios in it for placing the fish there, so we think it's reasonably foreseeable that actions could occur placing them there.

Point 2 is that there is a NMFS Endangered Species Act biological opinion due next month, in

December of 2011, in the operations of Englebright Dam.

We're not presupposing or presuming what would happen, but it's reasonably foreseeable that an action under that biological opinion would result in anadromous fish upstream in the Upper Yuba; therefore, going back to this table, affected by several of these facilities, which FERC has not adopted study of.

The third measure, we're pointing out that there are coming biological opinions also on this project, on the Yuba-Bear project, which is also in the Upper Yuba River watershed, the Drumm-Spaulding project, which is also in the Upper Yuba River watershed. That's a possible action that could occur there.

NMFS has proposed an action under the Oroville Feather River Habitat Expansion Agreement to place fish in the Upper Yuba River. This was part of a settlement agreement to mitigate for blocked fish passage on the Feather by doing it in another watershed. Our proposal here was to do it in the Upper Yuba River watershed. It's reasonably foreseeable.

We have a group called the North Yuba River Reintroduction Initiative, a multi-stakeholder group evaluating reintroduction of anadromous salmonids into the Upper North Yuba.

We have the Yuba salmon farm, which is a

15-member stakeholder collaborative, discussing actions to place fish into the Upper Yuba.

And we list some other things we have the possibility that Federal Power Act 4(e) authority of the Forest Service, for the U.S. Army Corps of Engineers in this project could place a mandatory condition in the license for reintroduction.

Similarly, the Clean Water Act 401 mandatory authority of the State Water Resources Control Board is reasonably foreseeable. And lastly, a consistency determination under the Coastal Zone Management Act. So we'd ask the panel to consider that.

On the one side we have logic that says the fish aren't there; thus, we don't need to evaluate the effects of the project. But we have temporal scoping established by the Commission 30 to 50 years out from 2016, and it seems reasonable to us that these many actions could occur in that time frame.

MR. BOWLER: Does the FERC staff want to review their rationale and make comments?

MR. MITCHNICK: I don't quite know where to begin. Alan Mitchnick, FERC.

I think it comes down to basically the fact that we believe that Englebright Dam is the blockage to fish passage in the Yuba River Basin. And that sort of

put that responsibility in a little bit different light than if the project actually affected it. So it turns more -- so mitigation for those effects is not the driving factor in relicensing.

You know, in consideration of all these proposed measures that are being discussed, you know, we acknowledge they exist, we are keeping our eye on these measures, but we don't believe that they're reasonably foreseeable. You know, because people want to see it done and it's probably a real good idea to do it doesn't mean it will get done or when it will get done or what will it look like, you know, what kinds of facilities will it require. Those types of details would allow us to make an evaluation of the project, but without those details, you know, we're sort of, you know, looking at every possibility and, you know, what you mentioned is a very large array of potential actions that may occur in the Basin or they may not occur in the Basin.

Our approach is more, well, if they do occur, we'll have to deal with them. We'll have to make sure that the project, you know, doesn't interfere or prevent that restoration from happening through, you know, structural changes, operational changes in the project.

But our approach more is, you know, when it does occur, we deal with it through the reopening

process, you know, when we have details that we can actually evaluate and come up with recommendations. At that time we'd be in a position to determine what was necessary for the project.

And the only other thing that I would add is that, you know, in terms of fish passage, especially anadromous fish passage, you know, the Commission has generally viewed this more as a regional action. This is something that needs to be developed not by the Commission but by, you know, a large stakeholder group such as the Yuba River Forum, and, you know, that's the type of action -- that's the type of approach that we would like to see, because passing anadromous fish up in the upper part of the Basin could have repercussions for, you know, a lot of other users in the Basin, not just, you know, the Yuba County Water Agency. So it has some potential to affect a lot of interest, so therefore, we'd rather react to plans than be out in the forefront and certainly wait for specific details so that we can respond to those details.

MR. HOGAN: I'd also like to point out, I think Al mentioned licenses typically carry a -- Ken Hogan with FERC -- the licenses are issued with the reopener. There's standard language that's put in every license that is designed to, you know, if there's a change in

the conditions that we want to reopen the license to address specific issues, such as a reintroduction effort. For FERC to do that, we think that that's the appropriate vehicle to do that, after the license were issued.

Larry had mentioned the potential would be for reintroduction before licensed fish under certain circumstances.

MR. THOMPSON: Or at least in order to do it, or an action.

MR. HOGAN: You know, and I want to point out that the integrated licensing process does have provisions for that in the study phase of the regs. I can look it up specifically, but basically, after the first year of the studies, if conditions change, there's an opportunity for additional study requests. And so there are opportunities in the regs to contemplate a change in existing conditions between study years.

But going back to the nexus issue, and I want to look at criteria 5, and I'm going to read criteria 5. It says: Explain any nexus between project operations and effects, direct, indirect, and/or cumulative, on the resources to be studied and how the study results would form development of license requirements.

Our interpretation of that criteria when

looking at the National Marine Fisheries Services' request was that the project effects, there is no project effect on the passage of the salmon at Englebright. Englebright is not a project facility. The barrier is Englebright; therefore, the project -- there is no project effect. And I think that's the issue.

If Englebright were a project dam, we'd be looking at this differently. But Englebright is not a project dam. It pre-existed the project. And that's the barrier to fish passage, and that's the reason we -- that was the basis for our approach for nexus to the project.

So criteria 5 is specifically to evaluate the project effects, and we couldn't see a project effect with a barrier at Englebright which preexisted the project and stopped the fish before the project was constructed, how the project was affecting those fish.

MR. BOWLER: So are you saying you see the issue of project effect and reasonably foreseeable action as inseparable?

MR. HOGAN: Am I seeing the project effect as reasonably foreseeable? The studies that were being asked for above Englebright were specific to effects of the project on anadromous salmonids. Anadromous

salmonids are not there. And for reasonably foreseeable issues we do have a reopener clause, but I don't think it's appropriate to assign responsibility to a licensee to do studies for things that may never come to fruition or how those actions may look in the future. And until we know what those future actions are going to be, we can design studies that are, arguably, really not . . .

MR. BOWLER: I'm just trying to get at whether there's two elements of the decision or one, and it would be the nexus related to Englebright Dam and the --

MR. HOGAN: Primarily, the nexus to Englebright Dam, like I said, if Englebright were a project facility, I think we would have looked at it a little differently.

MR. WANTUCK: Rick Wantuck, National Marine Fisheries Service. I have a couple questions for staff, FERC staff, regarding the nature of the Narrows 2 project facility.

In the pre-application document filed by the applicant there is a description of that project works consisting of an intake that begins in the project reservoir upstream of Englebright Dam, tunnels and penstocks that convey water independently around Englebright Dam, down through the powerhouse, out through the tailrace, and thus into the Yuba River.

Would you agree that's an accurate assessment of the facility?

MR. HOGAN: Yes.

MR. WANTUCK: So would you also agree that under most operating conditions that the Narrows 2 power plant conveys most of the flow from upstream of Englebright Dam to downstream of Englebright Dam?

MR. HOGAN: Yes.

MR. WANTUCK: In your professional judgment.

MR. BOWLER: I'd like to point out, one of the reasons I wanted to find out if there were two issues or one is because we are not dealing with the issue of Englebright Dam as a fish passage barrier. There's nothing that the panel can contribute to that discussion, because it's a fundamental policy question.

The panel feels it has some consideration under Section 5.9(b) of the reasonable foreseeableness of the project and whether there's a nexus there, and that's why I was trying to parse those two. I really want to avoid a lengthy discussion on something that the panel can't make recommendations on.

MR. WANTUCK: I appreciate the panel's position on that. I just want to point out for your consideration something to think about, that in addition to being questions of policy and law, there are really

practical engineering hydrologist matters involved here, biology involved here, and that's just the area that we're hoping to gain some insight into. So we can see that you can't make these recommendations of policy and law.

What I'd like to know is, in FERC staff's viewpoint, can fish swim from downstream into the plant, through the tube, and upstream of Englebright Dam? Do you believe that they can do that or not? That's a biology question.

MR. HOGAN: No. And we said that in our study plan determination.

MR. WANTUCK: Thank you.

MR. HOGAN: But to get more to your point, I think we disagree with what's reasonably foreseeable at this time. And I don't think we have the detail to do an accurate analysis of an action.

If there was a plan in place, if there was an active effort to move those fish upstream, we would certainly be interested in what those -- how the project facilities were affecting those activities. But until that time, we just don't think that issue is right for analysis in this proceeding at this time.

We're not saying we would never look at it. We certainly would.

We had a meeting with National Marine Fisheries Service and Fish & Game Service to discuss options to ensure a future look, and, you know, incorporating studies and on- and off-brand biological opinion through Section 18 fishery prescription. But it would all be triggered by when certain actions were taken and there was something real to evaluate.

Until that time, we didn't feel that it was appropriate now to be doing studies that, A, for an action that may never occur, or B, for an action that may not -- whatever that action may look like, the studies that we do today may not be relevant and may have to be done again.

So I think that our issue, the biggest thing was timing, when it is appropriate. We have never said that it will never be appropriate.

MR. WHITE: David White, National Marine Fisheries Service. And I had a question for the Commission staff.

Ken, you mentioned that in addition to the possibility of a license reopener, if I heard you correctly, during the integrated licensing process there's also a potential opportunity to start new studies in the second or third year that studies are already going?

MR. HOGAN: That's correct.

MR. WHITE: I was just hoping to clarify that detail. I thought I heard that.

MR. HOGAN: Yes.

MR. WHITE: That would be based on new information, I guess.

MR. HOGAN: 5.15 of the Commission regulations.

MR. BOWLER: Would you be willing to read those? I think there's three criteria.

MR. HOGAN: Sure.

Criteria for new study. Any proposal -- this is 5.15(e). Any proposal for new information gathering or studies pursuant to paragraph C 1 through 4 of this section must be accompanied by a showing of good cause why the proposal should be approved and must include, as appropriate, through the facts of the case a statement explaining any repeal or changes in law or regulations applicable to the information request, why the goals and objectives of any approved study could not be met with the approved study methodologies, why the request was not made earlier, significant changes in project proposal or that significant new information, material, or study objectives has become available.

Why the study request satisfies the criteria . . .

MR. BOWLER: This would occur at the study report phase?

MR. HOGAN: This would follow the initial study plan meeting.

MR. BOWLER: And on the current process schedule, when would that be?

MR. LYNCH: Probably the initial study report would be filed probably next October, early October, late September.

And I'd like to point out that also following the updated study report, which would be a year after that, there's also a provision for additional studies, and I believe the criteria is extraordinary circumstances.

I would imagine that reintroduction of anadromous fish upstream might be considered an extraordinary circumstance.

MR. BOWLER: That would be roughly September, October 2013?

MR. LYNCH: Yes, it would.

MR. THOMPSON: Related to that, the trigger question has come up -- I'm sorry. Larry Thompson, NMFS. The trigger question has come up within NMFS also about we have contemplated is there an automatic trigger that could be put in a study plan determination now that

says when the fish are placed there or when there's an order to place a fish there, an action, a plan, use something concrete, a reasonable and prudent measure, say, in a biological opinion that at that point we trigger studies so that the information is available at such time as that action is ready to be implemented.

What we're hearing is there's a reopener for a license, but what about sort of an automatic reopener in a study plan determination now?

MR. HOGAN: I think that could be done. Whether or not we could agree on what that action trigger would be would be subject to discussion.

MR. LILLY: This is Alan Lilly for Yuba County Water Agency.

I just want to be clear. We think there would be a lot of problems with that.

The problem is for Ken and Alan to try to write now what those criteria are before they know what the future order would be. I mean, if there's a future order that's in a BO, for example, with a reasonable and prudent measure that says you have to study fish passage, is that enough to trigger it? Or if there's a pilot program but no permanent program, is that enough to study?

So we have no problem with what FERC staff has

proposed and what's in the study plan determination about the standard reopeners, which, of course, reserve both FERC and NMFS's authority, but an automatic trigger when we don't know the specifics of the future we think would create a lot of problems and we would not accept that.

MR. BOWLER: Make sure we're talking about the same thing. One topic which we touched on but we haven't talked about is the license reopener.

MR. LILLY: Correct.

MR. BOWLER: Right now we're talking about the idea of a study plan from the study negotiation that this is the conclusion of.

MR. LILLY: Okay. Excuse me. That's a good clarification. But even for the study plan determination at that phase -- and you are absolutely correct, that's different than a license reopener.

But we would strongly oppose a provision that we automatically have to do a study based on some future event that we don't know exactly what it would be. Instead, that should be something for the Commission to evaluate at that time, one to two years from now, as Jim has said, if there's extraordinary circumstances, then the Commission can certainly evaluate that under its criteria to see whether a new study is appropriate then.

MR. MITCHNICK: And I would agree -- Alan Mitchnick, FERC. I mean, in some cases the trigger could be quite simple. You know, if six fish make it to point X, you study something. But something like this is going to be real difficult and probably involve Commission policies. So it makes it a lot more difficult to come up with a trigger.

I mean, if we could come up with a trigger that makes sense, everybody could agree with it, then fine.

You know, perhaps a better approach would be to, you know, set up a meeting. I mean, there's already meetings as part of the initial study report process. But, I mean, that certainly could be an issue and probably would turn out to be a big issue as a part of that discussion or it could be a separate discussion between FERC staff and NMFS staff to determine, you know, the significance of that new information. But coming up with a specific trigger, you know, probably would be difficult.

MR. BOWLER: I want to point out, by the way, that what we're moving into, this is our first topic anyway, so we're going to stick with it a little bit longer.

MR. LYNCH: Just a brief comment. I'd also like to point out that the ILP regulations do not

prohibit in any way anytime someone wants to file and ask for a new study anytime during the proceeding. The two points we've named on the initial study report, the updated study report are formally in the process, but it's not uncommon in ILPs for new studies to be implemented when things change between those periods, especially if the licensee and the relicensing participants agree.

MR. BOWLER: I wanted to ask, it's often that there's studies that are written with phases or with consultation staff. I mean, is there something that would work that would involve a consultation, sort of a guided consultation staff in the study plan that said if certain things happen there will be consultation and trigger consultation at that point instead of waiting, for instance, until the end of a study report? Any thoughts on that?

MR. HOGAN: I think our thought on that is, you know, we haven't heard anything from National Marine Fisheries Service or any of the other agencies that we'd be looking at a reintroduction effort. We haven't heard any information from the agency that a reintroduction effort would occur within the first year of study. So that trigger, I don't know what the value of that would be, but certainly I think at any time that, you know, in

the ILP process, if there is an active reintroduction effort, we're going to adjust on the fly to address that.

MR. WHITE: I guess I have one question for National Marine Fisheries Service and that is how does the timing of the development of a potential fishway prescription jive with your need for information regarding the project or conditions above Englebright? That is, my experience is you have to start developing your base of knowledge now.

So at the same time I understand the reasoning to request a study of something that's imminent. How do the two fit together?

MR. WANTUCK: Rick Wantuck, National Marine Fisheries Service.

According to the integrated licensing process, the point in time when a mandatory conditioning agency can submit a prescription under Section 18 of the Federal Power Act is after the Commission issues its ready for environmental analysis notice. Help me with the schedule here, but generally that's going to happen when?

MR. HOGAN: 60 days after the final license application was filed.

MR. WANTUCK: It's going to put it a couple

years out.

MR. MITCHNICK: You're talking about June of 2014.

MR. WANTUCK: Okay. And so at that point we have 60 days to file our preliminary prescriptions. What we seek is, through the study requests, is information to inform that prescription. And it only makes sense, due to the nature of trying to study complex biological organisms and complex hydraulic environment, that, you know, these studies take time. So in order for us to have this information in the form Section 18 prescription, we should start now and have more than one year of study in order to be in the best position to responsively issue a preliminary prescription at the appointed time.

MR. THOMPSON: If I could add to what Rick said, in our discussion of the reasonably foreseeable actions, the Commission OEP staff responded immediately, focusing on Englebright Dam, and we're now looking at upstream passage there.

I want to point out one of the reasons I held this table up was that if any of those reasonably foreseeable actions place fish in the Upper Yuba, downstream fish passage protection would be needed at several -- potentially at several project facilities, as

well as evaluations of things like peaking power at Colgate powerhouse.

So it's not as simple as Englebright Dam blocks fish passage or your views there. Those fish could be reintroduced through other means and then would be directly in harm's way of the project facilities.

And Rick is correct. When we go to draft our Section 18 preliminary prescription, we are seeking information about anadromous fish and entrainment protection, the effects of Colgate peaking, the thermal effects that would occur there, passage of fish around that area, the flows needed to navigate steep natural gradients, et cetera. So we want to make that point.

And I don't know, Kathryn, did you want to make a point? I sensed in OEP's response also their view about the Englebright Dam being the fish passage blockage, and it seems that what's lost there or missed there is that they may be impermissibly there, deciding upon our future execution of our Section 18 authority.

MS. KEMPTON: Kathryn Kempton from NOAA general counsel.

I heard and understood the panel to say that the panel will not make a determination as to whether Englebright Dam is a barrier or whether the Narrows 2 is a barrier. But the concern that we have, although it's

not explicitly articulated in the determination, it seems as though the Commission, the representatives of the Commission have made the determination as to the permissible scope of NMFS's Section 18 authority.

And I've provided you, just as a refresher, on page 16 of our filing today the precedent in which the 9th Circuit interprets Supreme Court law, referring that Congress vested in NMFS the authority to determine the scope of fishways prescription.

So for purposes today I'm assuming that the panel understands and believes that it is up to NMFS to determine the extent of the prescription and it is up to the Commission to either issue a license with the prescriptions that NMFS has decided upon or to withhold issuance of the license.

The appropriate place for a challenge to the scope of NMFS's prescriptive authority is in the Court of Appeal, and that's not the forum that we have here today.

MR. BOWLER: Let me defer to staff, give you an opportunity to comment on that.

MR. MITCHNICK: We certainly don't disagree with anything you've said. Yes, you determine your Section 18 prescription, and we certainly did not mean to imply that we were limiting the clarity.

You know, two agencies have sort of different responsibilities under the different statutes, and our responsibility, the Commission's responsibility is to make sure it has sufficient information to make decisions in the public interest. And that drives the information that the Commission needs to develop its part of the study plan determination.

You know, the Commission by statute is not obligated to require applicants to develop information that other agencies may need to develop their mandatory conditions. And I would point out to the 1990, you know, Interior versus FERC court case which supported that. The Commission impact does not have to provide studies needed for other agencies to develop their Section 18 conditions or in this case Section 10(j) conditions.

And, you know, the Commission said in its preamble to the ILP process that nothing in the ILP process would alter its previous finding in the Curtis/Palmer decision which basically just reiterated the Circuit Court decision.

So the Commission, although the individual licensing process attempts to develop information that would satisfy all agencies in their exercise of their responsibilities, it's not a requirement. And the

Commission is driven by what information is needed to make a finding in the public interest, and that might be a different finding that you need to make.

MS. KEMPTON: The concern we have with that response is, in part, that the determination appears to have been made that there is no nexus, not that the Commission is not obligated to assist the Fisheries Service with developing substantial evidence to support its prescriptions.

The concern is that in determining that there's no nexus, while it's not explicitly stated, it appears to be implied that NMFS could not create a prescription at Narrows 2, and therefore, there is no nexus of the information NMFS seeks to inform that condition. So I think that might be a different policy justification than appears in the study plan determination.

MR. BOWLER: I think we've heard your concern. The panel also is not in the business of devising or determining the Section 18 authority.

Rick, would you like to comment on that?

MR. WANTUCK: I'd like to make a statement in response to Alan's comments.

This is the first sentence in our notice of study dispute, and there's a quotation from the Commission, and it's notice of proposed rule making,

March 21st, 2003, having to do with the integrated licensing process, and it says this: The integrated licensing process should, to the extent reasonably possible, serve to establish an evidentiary record upon which the Commission and agencies with mandatory conditioning authority can carry out their responsibilities.

These are words published in the Federal Register by the Commission.

MR. LILLY: Yeah. This is Alan Lilly for Yuba County Water Agency. We obviously disagree with NMFS on Section 18, but we certainly agree with you, Mr. Bowler, that today is not the day to air out that dispute, so we won't.

I think it's important that we come back to section 5.9(b) of the regulations and talk about nexus. And the bottom line is, there is no nexus now between any Yuba River Project operations and anadromous fish passage.

Englebright Dam caused 100 percent of the blockage many, many years before Yuba Project was developed. There's no cumulative impact because the impact already was 100 percent. There are no anadromous fish in the watershed.

Now, the only potential nexus that we've heard

today is if fish may be reintroduced in the future. And that certainly is a possibility, although there's certainly a big dispute as to how likely that is.

But under those circumstances, with no present nexus, we really question whether the Commission would have the authority to order the study, and we think the approach that the FERC staff makes a lot of sense here, which is basically don't order the studies now when there's no nexus now, but keep the door open in case there's something in the future.

I mean, we do know if there is any reintroduction plan by a federal agency, that's going to have to go through its own deeper review. And, frankly, Yuba River Water Agency will be involved and will try to work out appropriate changes in project operations, if necessary, at that time.

And, of course, as we pointed out, the Commission has the backup both to order more studies during the study process and through the reopeners if something comes up after the license.

So this issue is covered now by the way the staff has proposed to do this in study plan determination, and under 5.9(b) there's just no nexus that would require the licensee to do more studies now on this issue.

MR. BOWLER: Does the panel have another question?

MR. WHITE: Does NMFS want to address a little bit, can you explain -- or I guess it could be anyone, really. Dave White, National Marine Fisheries Service. What is the Corps process currently going on with respect to Englebright Dam and what is the timing of what the outcomes may be?

MR. WANTUCK: The Corps process as in Corps of Engineers?

MR. WHITE: Correct.

MR. WANTUCK: Right. Well, last year Federal District Judge Carlton found the existing biological opinion with National Marine Fisheries Service and the Corps of Engineers arbitrary and capricious and declared that it needed to be redone.

At that time the judge offered, in his opinion, several items of where the deficiencies existed. Fish passage was one of those issues, as was climate change and a host of others.

The judge mandated that the Corps construct a new biological assessment, which has now been done, and we're operating right now with a current deadline of December 12th for a biological opinion. So the judge gave us a mandate to redo it, told us that, you know,

there are deficiencies and what they are, and that's currently the time line that we're under.

There has been a petition to extend that, but it's unlikely that it will be extended any more than, you know, a matter of months. So this is imminent, essentially, a new biological opinion from the Corps of Engineers.

MR. BOWLER: Was the need for a biological opinion an update to their Basin plan?

MR. WANTUCK: It was a litigation South Yuba Citizens League litigated, and it was the American River, I believe.

MR. HOGAN: We just brought hard copies of the two court cases that Alan referenced. I was wondering if I could give those to the court reporter for the record.

MS. KEMPTON: Kathryn Kempton, NOAA general counsel. Are you seeking information as to what the action of the Corps was?

MR. BOWLER: Yeah. What was the action of the Corps that the biological opinion was addressing?

MR. WANTUCK: What's interesting, the best I can do -- and, you know, I'm not the authority in this area, but I'll try -- is for the continued operations of Englebright and Daguerre dams. Interesting thing is

that the Corps exerts little or no control over how they're operated. It's really PG&E and Yuba County Water Agency that control the way flows are managed around there.

MS. KEMPTON: And obviously in this proceeding we're not taking any legal position on how the biological may come out, nor are we in a position to explain at this point because we have not reached that point.

MR. BOWLER: Fair enough.

MR. WANTUCK: May I just add one more thing, going back to Mr. Lilly's comments about nexus or lack thereof? We would like the panel to have copies of this report that was prepared by Montgomery, Watson, Harza in 2010 called Yuba River Fish Passage Conceptual Engineering Project Options.

And in this report -- and we'll also give you disks that have yellow highlights -- we have gone through and highlighted each time that this professional fish passage engineering firm identified the Narrows 2 project as having some kind of nexus to fish passage.

So I'd like to bring copies forward for each of the panel members and also I'll give you the disks that have the highlights clearly labeled so you can quickly refer to it.

MR. THOMPSON: We want to point out this has been filed in the record and discussed in several of NMFS's comments. And Rick is correct, there are some 35 times Narrows 2 facilities are discussed in terms of fish passage options in the vicinity of Englebright Dam. And in today's filing we also provide a list of potential, if you're looking at nexus, potential actions or modifications that this engineering firm thought might be required to those facilities, which could be potential license conditions, such as modifications to draft tubes, modification to the intake, auxiliary water supply, et cetera.

So to say there's no nexus, obviously, NMFS disagrees on that point and we've provided you some information that we hope that you will review.

MR. BOWLER: Thank you.

MR. HOGAN: I'd just like to address that, if I could. We don't disagree with NMFS that potential fish passage options identified by NWH there have a nexus to the project. The issue that's before us, though, is does the project have a nexus to the effect that those fish passage facilities are trying to address. And we say no, Englebright is the barrier. That's the effect. Whether or not the fish passage facilities that are being proposed or identified here have nexus to the

project are not at issue; it's what's the project's effect on the resource.

MR. BOWLER: Let's move on to some specific elements which is the panel's responsibility to respond to and also which might get us into some details of some of these issues that David mentioned at the beginning.

I'll start by doing our best to -- I'll start with the first one and try to summarize it as best I can. This is a tricky one, so I appreciate any clarification anybody can provide.

So this is Study Request 1, Element 1. And it's NMFS's request we understand to be requesting studies to determine whether or not the hydropower facilities are conducive to maintaining safe, timely, and effective fish passage from the point just downstream of all project facilities to points upstream of those facilities, particularly at Narrows 2.

In its initial study request, NMFS makes it clear that it is describing an area from just below the outlet to just above the intake of the Narrows 2 facility, and also including project infrastructures in between.

YCWA declined to add the study, although there are elements related to Study 7.11.

FERC did not adopt NMFS's request and its

determination is based on the argument that the physical conditions within a hydroelectric generating facility are not conducive to upstream fish passage and they saw no reason, therefore, to study the matter.

And then we understand that it's still under dispute because NMFS feels the Commission is bypassing an opportunity to investigate the full range of fish passage effects of the Narrows 2 bypass.

As a broad overview, is there any adjustment you'd make to our characterization of the dispute?

MR. THOMPSON: No.

MR. WHITE: Some of our questions are going to be aimed at trying to figure out what the Narrows 2 effects on anadromous fish downstream or at Narrows 2 powerhouse actually are, so my first question would be an operational question and that's how often do those -- does Narrows 2 start up and shut down, switch over to the bypass, and how does that affect flows downstream from Narrows 2?

MR. LILLY: Curt Aikens, Yuba County Water Agency's general manager, has now appeared and is here.

MR. AIKENS: Thanks. I had to fly up from Southern California this morning.

So it's a pretty rare event. I mean, I wouldn't -- it's an infrequent event that we switch

flows. Narrows 2 operates most of the time.

Conditions when Narrows 1 would operate are somewhat determined by PG&E, but you can have both plants running at the same time.

So, you know, I'm just thinking about that there might be two or three times in a typical year where maybe Narrows 1 would be switched off, one time for sure, and that's when we do our annual maintenance, which is typically in the September time frame, and it's typically for two weeks.

And so the operation is, if Narrows 1 can maintain the flow that's required, Narrows 1 would operate; if additional flow was needed, then Narrows 1 and a bypass valve would operate to provide the required flow. So that happens once a year.

And there may be times where, depending upon PG&E's desires, they have the authority to control which units operate when. We try to work on a collaborative basis on that. There may be times when they desire to operate Narrows 1 generation, and that would facilitate, if we're operating from minimum instream flow requirements, might be going from Narrows 2 to Narrows 1 with a bypass flow.

So my rough experience over ten years of managing the project, without looking at the records,

would be maybe two or three times a year that type of operation would happen.

MR. LILLY: I think you misspoke. It's two to three times a year that Narrows 2 is shut down. You said Narrows 1 at the beginning.

MR. AIKENS: Okay.

MR. WHITE: And if Narrows 2 or when Narrows 2 goes offline, that mean there's, as it's currently configured, an automatic switchover to the full-flow bypass facility or a portion of the water is shunted down the Narrows 1. So those two facilities, the bypass and the Narrows 1 are able to accommodate for the change in flows.

MR. AIKENS: So under what I would say is an emergency condition the automatic bypass occurs, and so typically, with my experience, it's been a transmission line failure due to a storm, a branch, a tree going through the wires or a fire. And yeah, then there's an automatic changeover. The rest of the time the changeover is manually operated.

MR. THOMPSON: If I might just add, there are some photos in today's handout that show this condition on September 12th or 13th of this year.

We happened to be visiting the site for other reasons, several sites in the Yuba watershed, we visited

the area and it was in this bypass condition, so it shows you some photos, including clusters of salmon downstream of the Narrows 2 powerhouse, which brings, in NMFS's view, the issue of the attraction flow that occurs to the powerhouse and speaks to some of the questions you have about what happens when the powerhouse is shut down and started up and it speaks to how the Narrows 2 facility, Element No. 1, question about Element -- Request Element No. 1. The evaluation around that powerhouse of the hydraulic conditions and the operation and how they affect fish passage.

And I want to point out it's difficult to see that cluster of salmon downstream of the powerhouse. We have requested the use of a Didson camera in this area, and my understanding is that has not been adopted in the request. But we believe that a technology like that could be much more helpful to determine the behavior of these fish in the vicinity there of the powerhouse.

MR. BOWLER: How well does the Didson do in turbulent flow?

MR. WANTUCK: We'd have to work around the edges, most likely. But the reason why we think the Didson technology might be useful here -- these photos, by the way, are in the handout that we gave you at the outset this morning.

This one right here shows a condition on September 12th of this year where Narrows 2 was shut down and the full flow bypass was in operation. We were standing on the deck of Narrows 2, looking down, and that's the angle that you see. We identified this and put a box around it. The photo couldn't penetrate the water, but our eyes with our sunglasses could see a dark mass of fish schooling just at the outlet of the shut-down Narrows 2 power plant.

Another interesting thing that we saw, which highlights how operations affect fish behavior, is, if you look at this photo right here, we witnessed Chinook salmon swimming at the periphery, right at the edge of the whitewater, nosing into that flow, because, from a fish passage engineer's standpoint, I would say that what they're doing is trying to find a route upstream. This high energy, fast-moving flow represents to them attraction flow to the upstream route. So they were nosing into that whitewater, and then a whole group of them were down that deep pool.

The other thing I think is interesting about this is this particular shutdown happening in mid-September, that's spawning season for Chinook salmon in Yuba River, and to the extent they get attracted here, delayed or even trapped further up, if they could

get by and couldn't get back, you can see it's very rocky and, you know, a difficult route to get further upstream to the dam there under these flow conditions, then they may not be able to fall back and seek the only spawning areas that are currently available, which is down in the Sonora Bar and Timbuktu Bend area.

So there are conceivable scenarios of operations where these fish might actually penetrate into the power plant as it's being shut down, may get injured inside or may get trapped upstream by turbulent flows and the rocky nature of the local area.

And these are the things that we're asking for study about, to try to better understand, as the plant starts up, shuts down, goes through its various operations, even during steady-state flow, as perhaps Narrows 1 may start up and shut down or there may be spill over the dam, these are all different hydraulic conditions that the fish would react differently to, and these are the kinds of things that we're asking for study of.

MR. BOWLER: Ken.

MR. HOGAN: It seems to me that what is being asked there, we're now talking about Elements, well, 4 and most all, and what the Commission did here is we don't disagree at all that there needs to be a study

about fish behavior from the Narrows 2 downstream from the river system, how the Narrows 2 facility is affecting fish in that vicinity.

We didn't think it was necessary to look at how the Narrows 2 penstock and wicket gates and runners were affecting fish passage inside the facility. We just said we note that it's not a conducive route to upstream fish migration. That's fine. We didn't see a need to go into any further detail. But we are interested.

And we did propose a study or require a study, 7.11 and modifications to it, to get at how was the facility -- or how are the fish interacting with that facility.

Since the dispute was filed, NMFS has provided some additional information that we feel it warrants further analysis, mainly regarding how we modify study 7.11.

YCWA's proposal was basically to conduct a transect across the tailrace area to develop -- to identify the flows and whether or not there was a velocity barrier and if fish could -- identify whether or not fish could even access the powerhouse area.

NMFS raised some good points about whether or not that methodology would be feasible, and so we're taking another look at that.

But our three phases were, first, to find out if there was any anecdotal knowledge from the operators of the facilities about fish being stranded, injured, or harmed within the Narrows 2 area, two, to conduct the applicable study, and the third phase was then if either Phase I or Phase II demonstrated the fish could access the powerhouse area facilities and potentially be harmed, then to do 3, develop a study that adopted NMFS's request for a Didson.

So we're now re-evaluating whether or not Phase II, the applicant's proposal is even necessary, and we may recommend to the Director Phase I and III, but not be a phase, just do number 1 and 3 as an approach, as applies to downstream of the Englebright Dam.

I want to note their recommendations also here apply to Colgate and other things, so we're still drawing that line, but we are interested in the information on how the fish are interacting with the Narrows 2 powerhouse.

MR. CRAVEN: In regard to the transect, the one transect, why is that sufficient to characterize the injury, mortality, or delay at the tailrace and also to the base of the dam? Seems to me there could be false attraction to the base of the dam.

MR. HOGAN: There were other habitat studies being done to the base of the dam. We acknowledge it's got a 400-foot bypass. But that exactly is the issue here that we're now understanding -- have a better understanding of the situation of doing one transect and feel that it's probably not appropriate, and we'll be making a recommendation to the Director -- we don't know what the Director will do -- but that a study be developed for the NMFS request for a Didson or similar-type technology to evaluate fish behavior and their activities near the powerhouse, if there's harm or injury occurring there.

MR. BOWLER: Jim and then John.

MR. LYNCH: Jim Lynch, HDR.

We've had discussion with FERC and with NMFS on this issue and we agree that developing a study, modifying a study -- I think it's 7.11 -- to address the interaction of the anadromous fish with powerhouses is an appropriate study.

We propose the transect approach for a couple of reasons. Number one, we're trying to gather information that we believe NMFS requested on hydraulics in and around the facility.

We believe if we go to a simple study of how the fish interact in the study we may not need to

collect a whole lot of hydraulic information. It may not inform the study in any way, so we want to have additional discussion on that. We never concluded those discussions with FERC and with NMFS.

And secondly, we do have concerns with what we can really do. There were suggestions using acoustic Doppler to map the hydraulics in and around that system. It's very turbulent when the system's on. We don't believe acoustic Doppler will really get you there. And the Didson cameras have limited approach because of the turbulence and some other issues, but we think that is a good way to go, along with just overall observations on fish interaction and the facility. So we support FERC's re-looking at this and focusing primarily on the fish interaction in the facility. Again, I'm talking Narrows 2 here.

MR. WOOSTER: Yeah. Actually, I -- John Wooster, NMFS. One thing to give -- Dave, back to your original question about Narrows 2 shutting down, I wanted to read a characterization that's in YCWA's study plan 7.11.

It says YCWA's maintenance activities at Narrows 2 powerhouse included generator brush replacement which requires a six-hour shutdown two to three times per year and annual maintenance which

requires a two- to three-week shutdown, but may be longer if maintenance is needed.

And then further on it says that YCWA schedules annual maintenance activities at Narrows 2 during late August and mid September as determined by surveys.

I wanted to note that that time period, late August to mid September, are the time frames when spring-run have been witnessed holding in pool there at Narrows 2. So that was one item I wanted to bring up to your attention.

The other thing I wanted to point to the Commission's attention is part of the packets that you have here and what was filed this morning, we put two documents on the record that I think are particularly germane to the issue at hand of studying Narrows 2 tailrace.

The first one is -- and I'm now on Element 2 here on the study. The first one is a FERC 1995 document, Impacts of Hydroelectric Plant Tailraces on Fish Passage. This document is -- it basically has as its quoted intended purpose is to provide background perspective and technical guidance for FERC staff regarding tailrace concerns.

And again, we put this on the record this morning.

MR. THOMPSON: John, can I clarify just real briefly? We didn't have room in the books, but we uploaded it electronically and we highlighted it. There's some yellow highlights of some of the points that John's going to make.

Sorry, John.

MR. WOOSTER: And I do have an extra copy, which is a hard copy.

I thought one particular passage I'd like to read from FERC's 1995 document is: To successfully identify or predict migrant injury and mortality related to a hydroelectric project, all relevant biological and hydraulic characteristics at a site must be understood. Hydraulic conditions are often complex and difficult to characterize. Even if fish are not being directly injured in tailrace and draft two barriers, there may be adverse impacts with migration delays. And this comes in kind of the summary section on tailrace effects.

The second document that we put on the record this morning is a NMFS 1993 document, The Use of Barriers to Prevent Adult Salmon Delay and Injury at Hydroelectric Powerhouses and Wasteways. This 1993 document summarizes why and where and when often tailrace barrier exclusions are necessary. It lists several case studies documenting tailrace injuries and

mitigation measures that were used.

So when you look at these two documents, you can kind of direct things that they point to and also indirect references you can make from the case studies, you have several issues at hand at Narrows 2 that would point to a full-blown evaluation of the resource here.

In particular, you have -- the document listed fish in the area of the tailrace, they are present during the annual maintenance startup and shutdown. Several of the case studies that are identified in here show that often the most egregious impacts to fish occur during startup and shutdown procedures.

There are no barriers or screening devices currently on the tailrace. And several projects have shown that when you have a dominant flow coming out of the tailrace that fishes have to access the draft tubes at various operating conditions. And the NMFS 1993 document states that this is particularly an issue when no adequate adult upstream migration facilities are provided, and there are none. It's not even not adequate; there are no upstream migration facilities here.

A particularly interesting case study that's a NMFS 1993 is something called Seton Lake Dam in British Columbia, which is a powerhouse set up very similar to

the Narrows 2. It's a vertical action plant turbine. Its generation capacity is 44 megawatts, similar to the 55 megawatts at Narrows 2. Its hydraulic capacity is 4000 cfs. You have 3400 cfs as the hydraulic capacity at Narrows 2. The operating head is similar as well.

At this one particular project it was shown that salmonids were accessing the turbine blades at various operating conditions. It also documented that there was substantial draft tube injuries occurring to fish as they were bouncing off the walls, even if they weren't accessing the turbine blades.

And in addition, they found that fish were suffering internal injuries from hydraulic stress, not even -- noncontact injuries with the actual project facilities.

And an issue that I have with the phased approach that FERC put forward in the determination, which was the one transect approach, it was stipulating that basically if we could determine whether fish were accessing the project facilities and that would assess whether there was potential for fish harm or not and move on to a Phase III.

And there's several potential impacts here to fish that are possible irrespective of whether the fish can actually reach the draft tubes, concrete turbines,

et cetera. One would be excessive energy expenditure from attempting to ascend the draft tubes, regardless of whether they get there or not. Migration delays. You have migration delays if the fish are holding there, attempting to swim upstream. There's been documented pre-spawn mortality, reduced egg procundity or reduced spawning success with delays. You can have pre-spawn mortality just from the stress with the bearing flow regimes and temperature regimes.

So there's several possible impacts here that, irrespective of whether this one transect approach would even inform us whether the fish get access to the facilities wouldn't be evaluated with Phase II, the current approach.

MR. BOWLER: Can I cut you off there?

MR. WOOSTER: Yeah.

MR. BOWLER: It sounds like everybody agrees that there's a study proposed and there's an agreement that some of the study probably needs to be modified, and the issue was how it should be modified.

And with that thought I'm going to take a break for ten minutes and we'll pick up with -- we're well into the other topics of Request 1. We'll pick up with that after the break and try to finish with the Request 1 and get on to Request 2.

So ten minutes. Please be back at 11.

(Recess taken, 10:51 to 11:06 a.m.)

MR. BOWLER: Let's resume. We're now still talking about Element 1, but we're also talking about the other elements of Request 1. And I think Dave has some discussion to get us started on our discussion again.

MR. WHITE: These are questions I think primarily for YCWA and they did ask what sort of information, if we were to do a desktop analysis and compile all of the existing information about what we know is happening outside of Narrows 2 right now, so my first question is, does YCWA have any written monitoring procedures to actually look for stranding or false attraction to the powerhouse or to the full-flow bypass facility, scouring of reds, fish jumping at the powerhouse outlet or bypass facilities, or are there any formal procedures in place that would be able to inform the information around which we would design the next steps in the study?

MR. AIKENS: None at this time, although Jim Lynch is probably best to talk about what we're looking at.

MR. LYNCH: We don't have any formal procedures in place under the relicensing. Maybe Tom can talk

about any analysis, or Paul. But we did agree during a conference with FERC and with NMFS that we would put in place incidental observations by the operators when they did visit the facility to document any observations on fish, where they see them, what their activities are.

And we've developed a standard form, and we're going to meet with the operations staff and have them begin to record that information every time they visit the facility. So we did agree to do that.

This is incidental observations, not a scientific study, incidental observations by the operators as they visit the project.

With regards to detailed studies, Tom, can you address that maybe?

MR. JOHNSON: Sure.

Tom Johnson, consultant for Yuba County Water Agency.

Let me just answer what I think your question was in two or three parts.

Historically, there's been anecdotal observation of fish in the vicinity of the powerhouse and clear up to the base of the dam. I think that's well documented. Certainly the River Management Team, which is a multi-disciplinary group, including NMFS, that oversees the flow regimes for the Lower Yuba River,

have all personally observed that, stood on the powerhouse deck.

To my knowledge, there are no definitive studies that have looked at those behaviors particularly in the vicinity of the powerhouse, the full-flow bypass or up to the base of the dam.

The RMT has been proceeding for three years now. This is our third year of an acoustic tracking study of spring-run Chinook in the Yuba River, and we're, I believe, close to having some pretty good ideas of how fish distribute themselves up and down the river.

It is a finite length of river. They do use the entirety of it. So of the five to six thousand fish, for example, nominally that we would have above the dam, we would expect them to be -- more of them high up, and so a certain number of them will reach Narrows 1, Narrows 2 and even the base of the dam, but by no means all. They're, you know, highly mobile both upstream and downstream.

So that provides just a little bit of help in background. There will be additional information that should be published within the next month or so. There are some draft reports that are in review by the RMT, including NMFS staff right now, and those should be available publicly -- I think the target date on that is

within about 30 days or so, if that helps.

MR. WOOSTER: Tom, can you clarify again what the most upstream acoustic receiver is for the tagged fish?

MR. JOHNSON: It's downstream of Narrows 1. Since it's acoustic, you know, it can't be too close to the powerhouses, but we do have them downstream of Narrows 1, and we do roving surveys in the entire reach from below Narrows 2 down as far as you can easily get with a kayak and a mobile tracker.

MR. WHITE: That's helpful. Thank you.

The YCWA explained how often and I heard for how long in a given year the powerhouse might shut down for maintenance, et cetera.

I'm wondering if on a regular basis there's any dramatic fluctuations in the flow that don't lead all the way to the powerhouse, the powerhouse being offline. Are there ramping or monitoring -- sorry -- ramping requirements in place or ramping procedures in place?

MR. AIKENS: So the typical flow changes that occur at Narrows 2 and, you know, between Englebright spill, Narrows 2 and Narrows 1, are one for minimum instream flow requirement changes when they go up and down, and depending upon how much water you have in the system, so there's times where there are changes within

the year.

The second operation I can think of where there's changes are during storm operations, and that would be where there's storm flow coming into Englebright and so the flows will go up and down and there's a standard procedure put together for that.

And then there's -- the typical ramping rate is 100 cfs per hour. There are times where we might ramp up a little bit higher. If I recall correctly, I believe the ramping rate requirement in the license is 500 cfs. But with all of our operations we try to make them as fish-friendly as we can.

Does that provide you with what you need?

MR. LILLY: He asked were there any requirements in the existing license. You might just mention there are the flow fluctuation requirements in the existing license, as well.

Actually, the Commission amended the YCWA Federal Power Act license in 2005 when the full flow bypass was put in to actually make the -- we call them ramping up. The hundred cfs per hour is how fast we can go up. The going down, of course, is much more sensitive. And there's some fairly detailed requirements in the license, which were made more stringent in 2005, that obviously Yuba has to follow.

And then there also is -- Jim can elaborate -- there is a flow ramping study plan that's part of the approved study for the site plans that we're going to be implementing.

MR. WHITE: Thank you.

MR. WOOSTER: David, would you like to hear the ramping requirements that are on the current license?

MR. WHITE: No, I think I have a good feel for them now, now that I know they're in there. I was mostly trying to get at how often per year these ramping requirements might come into play. It sounds like it's really due to storm events and changes in seasonal stream flow requirements mostly and powerhouse going on or offline.

MR. LYNCH: They're in the PAD in -- I think it's section 6.

MR. WOOSTER: Yeah, it's page 6-30 of the PAD.

MR. LYNCH: Thanks, John.

MR. BOWLER: I think we've covered Element 2 to a good degree.

One specific question I had which I was unclear on is whether there was a request for, I guess, looking at the need for tailrace screening by NMFS in a couple of places in the various study requests, one of which was, I think, in the Element 2, and I wasn't clear on

whether FERC in the determination required that that be a component of study 7.11 or one of the other studies, the specific issue of studying tailrace screening.

MR. HOGAN: Ken Hogan with FERC.

I think, no, it was not. The issue was from our perspective of determining tailrace screening design or anything is premature. Typically at this stage of the ILP we like to evaluate what the project effect is and then does it warrant the development of a PM&E. And that's done through the agency's mandatory conditions or FERC's NEPA analysis in terms of conditions that we receive from the agencies and -- but it's based on the information that we'll get from the studies that are being required.

So an actual design or determination that a tailrace barrier is necessary now I think from our perspective is premature. I mean, we typically like to wait and see what the studies show before we start to guess at what the appropriate PM&Es are going to be.

MR. BOWLER: As I understand it, you would hope that the studies would provide the information to decide at the appropriate time whether a tailrace screen and the nature of it, if it was needed, that decision would come later, but the studies you're hoping -- you're intending to provide the information but not to bring a

decision or a recommendation.

MR. HOGAN: Correct.

MR. CRAVEN: Just to clarify, the study plans will be revised to collect the appropriate information to evaluate the impacts on surrounding false attraction, et cetera, to the base of the dam as well as to the tailrace and that information likely would be useable for evaluating whether or not the tailrace barrier is necessary?

MR. HOGAN: Yes. And I'd like to point out that, regarding the study 7.11 as modified by FERC, we recognize now that there are some flaws with the way that we required it. We'd like to work with National Marine Fisheries Service and YCWA to refine that, to get that better information.

But ultimately, I mean, we are prepared to make a recommendation to the Director now for certain modifications to that, but we -- again, we would like to work with NMFS and YCWA to, during this period of time, hopefully before December 9th, to try and resolve the issues over the behavioral components of the study and the hydraulics, if necessary, different approaches to address that. But we do recognize flaws with 7.11 as we required it.

MR. BOWLER: We'll save that one for last.

MR. LYNCH: Jim Lynch, HDR.

We'd like to say that we also -- we agree with that and we'd be eager to work on that redesign of the study.

MR. BOWLER: Thank you.

MR. WANTUCK: What I'm hearing FERC staff offering is a staged approach, first looking at whether or not there's a fish behavior of concern.

MR. BOWLER: That's not what I heard. I heard that the stage approach was possibly being put aside, but -- not definitely, but . . .

MR. HOGAN: I'm going to let Rick finish, because he might be correct.

MR. WANTUCK: We had a conversation earlier about this. And my understanding of it is there's two ways to approach this. Number one is you look at the behaviors of fish in the area to see if, A, are they there, what are they doing, and so on, and then once establishing that there are fish there and some behavior is occurring, then if there is indeed that behavior, then that kicks off another stage which would be the hydraulics, hydrology portion of it.

And so, in theory, you would spend maybe parts of the first year looking at these sporadic events, when the plants are up or down and, you know, the storm

events occur and, you know, if you could be there at all of those key times to look at these throughout the year, then you could make some kind of judgment about whether or not hydraulic engineering studies are warranted, to then go into a design of something like a tailrace barrier.

The problem that we've had with that goes back to Mr. White's question before about the sequencing of the ILP and when in the process we are required to make our Section 18 prescriptions.

If we spend the first year looking around and then the next year doing hydraulic experiments, we never really couple the behavior with the actual hydraulic conditions occurring at that time.

So as a for-instance, if I know fish are attempting to enter the powerhouse during a shutdown procedure, I want to know the stage discharge relationships, the velocities that are exiting the powerhouse, are fish -- do they have to jump four feet, six feet, eight feet, what part of the powerhouse are they coming into contact with.

And this argues for actually coupling the behavioral studies with the actual hydraulic conditions that are happening at that time, and so we can see what a fish is doing and understand what the water is doing

to cause the fish to have that behavior.

If we de-couple those, then you run the risk of not really being able to pin a behavior to that power plant operation.

And so I think that when we look forward to maybe the possibility of prescribing such a barrier, we would like to have this coupled information as a set and that would give us a much stronger foundation on which to prescribe a protective measure.

MR. HOGAN: So what Rick was just describing is something I think we're open to discussing with NMFS and YCWA.

Stephen, you were correct about, you know, the phased approach that we've outlined in the study plan determination we are re-evaluating, and so I don't want to -- what Rick's describing seems to be more of a discussion that we can have offline and through our resolution process. Where that will end up, I have no idea. But I do want the panel to be aware that we are prepared to alter 7.11 -- or make a recommendation to the Director to alter 7.11.

MR. BOWLER: Thank you.

MR. LYNCH: I just wanted to add, reiterating that we are, too, and we'll see where those discussions go.

Our concern initially was doing a broad-based hydraulic mapping of potentially, you know, two or three tenths of a mile upriver when we're interested in maybe five, six square feet and maybe something more -- if we're going to design something maybe more specifically, a specific location for engineering type design.

So I think hopefully in our discussions with NMFS and with FERC we can narrow that down so it's a focused data collecting. And I don't disagree that hydraulics might be appropriate as part of that.

MR. WOOSTER: Can I clarify that NMFS is interested in more than five or six square feet.

MR. LYNCH: I was just using that as an example.

MR. WOOSTER: A considerably greater area with outfalls coming out of Narrows 2. There's the pool at the bypass reach, which is -- you know, flows coming out of there a couple weeks a year. It is a larger area than five or six square feet.

MR. BOWLER: I think the point is that in negotiating there may be spatially distributed solutions that at some places you need to do this level of detail, some places you need to do that level of detail, and that can be part of your discussions.

MR. WANTUCK: Interestingly enough, the

applicant has hired a U.C. Davis professor, Greg Pasternack, to map this lower river at great detail and great refinement, except it just doesn't start in the project area. It starts further downstream.

Now, I know that some of these additional studies are happening to try to cover some of that gap, but I don't believe it's geared toward the kind of mapping that we're talking about with respect to the fish.

MR. LYNCH: I'll let Tom go into that, but there are others. As we talked before, there are certain logistical constraints around the powerhouse primarily to collect detailed hydraulic mapping when the powerhouse is on, with the bubbles and everything else. So I don't know if Tom wants to add anything, but I know Greg had looked at what he can do up there, but it's relatively limited given the logistics.

MR. JOHNSON: The mapping effort is small boat or kayak based, and it uses a depth ranger and a lot of transects back and forth, and that's not typically something that you would do immediately proximate to an emergency bypass or immediately downstream of the powerhouse. So it's been mapped as far up as it is safe to do, and beyond that we'd have to shut the powerhouse at the bypass off in some way, shape, or form to allow

safe access with the equipment available.

MR. LYNCH: And in that case we wouldn't be mapping the conditions that we would want mapped hydraulically.

MR. WOOSTER: If I can maybe have the panel look at this photo or a similar photo, you'll notice kind of a deck of Narrows 2 with a railing kind of extended out over the water.

I've participated in past studies where we've taken a railing such as this and cabled off flow velocity meters, relatively large scale meters, and measured discharges in turbulent areas off of a deck such as this.

And yes, the general area here is probably quite unsuitable for someone in a kayak to be paddling around while the units are on or the bypass is on, but as long as you're out of the very aerated areas coming out of the outfall, you have opportunities to have an unmanned ADCP, a small boat, being controlled from the banks either by remote control or tethered. I think there's a range of possibilities to collect hydraulic information in this vicinity.

MR. CRAVEN: You're talking about velocities?

MR. WOOSTER: Velocities and depths, yes.

MR. CRAVEN: Now, that's exactly where? Is it

right at the tailrace or in the trap?

MR. WOOSTER: Which part? I think you could lower meters off the deck here at Narrows 2 for right at the tailrace for the discharge conditions coming right out of the tailrace.

And if you move to -- actually, you guys have the air photos in the binder. You can kind of -- actually, I think there's -- the air photos are just that picture out of the PAD there. You can kind of see areas that have a lot of aeration, which can typically give an ADCP problems. You can remotely maneuver an ADCP in a lot of the surrounding margins, margin areas to the plumes coming out of the power plant there.

MR. CRAVEN: Is it not possible to estimate the velocities coming out using your computer?

MR. WOOSTER: I think you could certainly come up at least with some average velocity conditions.

MR. CRAVEN: Yeah.

MR. WOOSTER: But a lot of times average velocity conditions don't characterize the full spectrum of the flow coming out of a turbine. There are a lot of areas that can deviate quite a bit from an average velocity calculation. But it's probably certainly a workable initial desktop exercise.

MR. WHITE: So the current profile or

measurements might get at velocities along the margins, which would typically be where anadromous fish would try to get in and an average cross-section might not capture that.

MR. CRAVEN: Would the studies take into account Narrows 1, also? In other words, if Narrows 1 starts, stops, from time to time, or flows change, how does that affect what's going on up Narrows 2?

MR. WANTUCK: We've asked for such comprehensive studies that we could look at how plant shifts and shutdowns and startups and alterations affect, you know, what's going on at the other site and in this case. We'd ask for it.

MR. BOWLER: Jim?

MR. LYNCH: I was just going to say, Narrows 1 is a different project facility, not located downstream in operations at Narrows 1 today and possibly under a new license may be very different, so we'd have to have some discussion on what value that would provide in terms of information and ultimate development of PM&Es for YCWA's project.

MR. THOMPSON: But, Jim, isn't it true that the two powerhouses are closely coordinated? I think FERC's 2005 EA that Alan Lilly referred to earlier discusses this, the close interoperability of the two, and

so . . .

MR. LYNCH: They're closely operated today under the existing power purchase contract. Whether they will be under a new license I can't say.

MR. THOMPSON: That's true. And in the Narrows 1 license there is an article that has a reopener, so that if operations at Narrows 1 need to be changed contingent on the licensing at Narrows 2 it could occur.

MR. LYNCH: Good question.

MR. THOMPSON: I just want to point out they're that closely tied to one another.

MR. HOGAN: To further address that, I think, as I've said, you know, FERC is willing to work with NMFS staff on the study. And I do agree that it should be looking at validity of scenarios that would occur at Narrows 2 as far as how that project's operations in the river would affect fish and movement.

And if that means that, say, Narrows 1 were to shut off and result in fish moving into Narrows 2, that should get captured, but I think we would limit it from what the -- if that shutoff at Narrows 1 is what is the effect on the fish at Narrows 1, meaning we want to know how fish are responding to the Narrows 2, but we wouldn't necessarily go and look at how they're

responding at the Narrows 1 facility.

MR. CRAVEN: Right, right. So your project area then would be what exactly?

MR. HOGAN: Right now we haven't fully discussed the wide range, the scope of this very specific study that I hoped we would, but right now we are looking at project effects from the Narrows 2 powerhouse downstream to the Feather River as far as a study area.

MR. CRAVEN: Right, right.

MR. HOGAN: But as far as the very specific interaction with the Narrows 2, we have not set a lower boundary on it.

MR. CRAVEN: Okay.

MR. BOWLER: Speaking of downstream, I'd like to move downstream to Request Element 1.3, Passage at Daguerre, which I hope I'm saying correctly.

NMFS requested studies focusing on the project effects on fish passage conditions and the efficacy of the ladders and screens at the downstream Corps' Daguerre Dam.

YCWA said that it is not their dam and there are no anadromous fish at YCWA's New Bullards storage dam. Thus, they argued there was no nexus.

FERC determination. FERC said that NMFS had

demonstrated nexus to the downstream issue and therefore FERC was requiring study of flow timing, magnitude, duration, and rate of change on fish passage conditions at Daguerre Dam and required consultation step and adding these elements to the studies.

NMFS in the dispute filing didn't say anything specific as to -- in response to the FERC determination.

MR. THOMPSON: We're prepared to do that now.

MR. BOWLER: Okay. Is there anybody who wants to suggest modifications to the description?

Okay. Go ahead. Explain your . . .

MR. THOMPSON: I would say on this that it's NMFS's understanding that project effects need to be evaluated, should be evaluated, whether or not the effect occurs at a project facility or not.

Is that FERC's understanding?

MR. MITCHNICK: Generally, yes.

MR. THOMPSON: I'm asking because when we were discussing Narrows 1 just a minute ago Mr. Lynch's response first was Narrows 1 is not our facility. That is true. However, we were interested in the effects of the project at Narrows 1, and that should be studied. Similarly at Daguerre Dam. Daguerre Dam is not a project facility, it's my understanding it's a federal dam, but we're asking for effects to be assessed at that

nonproject facility, project effects assessed at that facility. So we want to make that point.

We don't understand this continuing argument we hear, "That's not our facility." We still believe the effects should be assessed.

MR. BOWLER: My understanding is that FERC agreed that there was a project effect and required a modification of a -- or an addition of the study to deal with this. So what's remaining --

MR. THOMPSON: Right. What's remaining --

MR. BOWLER: What's not satisfactorily to you about FERC's determination?

MR. THOMPSON: I see what you're asking now.

What's outstanding is I think that OEP staff included only how operation of the Narrows 2 powerhouse would affect fish passage conditions at Daguerre Dam. I'm perplexed as to why only that project facility and its effects would be assessed at Daguerre Dam.

MR. BOWLER: Let me ask --

MR. THOMPSON: As opposed to, for example, I mean, the big gorilla in the project is the one million acre-foot storage facility at New Bullards.

MR. BOWLER: Let me ask the FERC staff if that's really what was intended or if they just meant the flows coming out from -- not the operations of

Narrows but the flows coming out, which are partly a product of the releases from the storage dam.

MR. HOGAN: It was the operations of Narrows 2.

MR. BOWLER: Okay. So it was specific to the --

MR. HOGAN: Up to the hydraulic capacity of the powerhouse or -- and/or the bypass. You know, basically what's within the control at the Narrows 2 facility and how those releases would affect Daguerre.

MR. BOWLER: And as I understand it, YCWA has no real storage -- let's see, you have to use what you release from -- you don't have storage privileges in Englebright Dam pool, so you have to use the water that you release from New Bullards in 15 -- so many days. I forget. How do these two interact to -- I'm trying to figure out whether there's a real difference between the operations of Narrows and what's released at New Bullards versus -- and then is then released at Narrows. I guess Narrows 1 is a factor.

MR. AIKENS: Curt Aikens. I would say that the operations of the Colgate powerhouse and the Narrows 2 facility are pretty much disconnected on a, you know, just a minute-to-minute basis over a day. So the way we work with PG&E is that we try to keep the Narrows -- or the Englebright reservoir within a range, and I think

it's primarily between 517 and 523 feet. And that will be dependent upon the flows coming down from the South Yuba, the Mid Yuba, the North Yuba, and releases from the Colgate powerhouse.

The way we operate Narrows 2 is to provide a constant flow, as constant as we can, you know, for fishery purposes in the Lower Yuba River. So you can have Colgate going up and down, the reservoir level will fluctuate some, but the flow going out of Narrows 2 will remain constant, unless there's need to change the flow downstream.

Does that help?

MR. BOWLER: It does help. So what remains --

MR. THOMPSON: Well, what we're describing there is a situation where the river is so-called under control, and Narrows, you know, the applicant's making the contention that the only flow the project releases is the controlled, say, up to the maximum flow through Narrows 2 powerhouse, so let's say 3400 cfs. But there's a spillway on Bullards Reservoir, Bullards Dam, which can release flows in the winter. Those release flows, if they exceed the capacity of Narrows 2 and Narrows 1, will spill over Englebright Dam, combining with uncontrolled flow or release from the Middle and South Yuba Rivers. And those higher flows could affect

the conditions at Daguerre Dam. And this could occur in the spring during a migration season for salmon, downstream migration season for smolts and steelhead.

So that's the point we're making. There is some at least cumulative effect that should be -- of other project facilities rather than just Narrows 2 that should be included in this study. But we're happy to see there's some acknowledgement to do the study.

MR. HOGAN: I would just like to point out that, you know, we're talking spill flows. Those are flows that are uncontrolled by the project. And let's say we want to limit the spill flows over Englebright so we're going to shut down the project. Well, then the flows will just spill over Englebright.

So we concentrated the study on what's within the control of the licensee, that's that 3400 cfs, meaning even if you were trying to reduce the spill flow because the studies showed that the best passage was 2500 cfs, both the spill plus your 3500 was 5000 cfs, so you want to reduce your operational flow release, that's just going to result in it spilling and you're not going to accomplish anything.

So I think, you know, when we start talking spill flows, we're beyond the control of the licensee and it doesn't make sense, in our perspective, to have

to do that analysis, because there's no PM&Es that could result in a measure that the licensee would be in control of.

MR. THOMPSON: Ken, we just respectfully disagree. Let me give you a quick example. Let's say the Narrows 2 powerhouse is at capacity. Let's call it -- round it to 3500. And Narrows 1 is releasing 500. So you're saying there's a 4000 cfs flow in the Lower Yuba River that can reach Daguerre Dam, and that's all the project has control over.

But let's say that's what we've got now and we release from the New Bullards Dam spillway 1,000 cfs. That will pass over the top of Englebright Dam, because the others are operating at capacity. That will affect fish passage conditions at Daguerre Dam.

That's under the control of the project, how that spillway is operated. And that spillway may be operated for other purposes besides fish migration. It may be that we come to a PM&E development for geomorphic reasons, gravel transport, wood transport, et cetera, and we do this in the spring when there's flows released from the New Bullards spillway. So it's clear that there is a nexus there to the project and a potential PM&E.

MR. WANTUCK: I want to add another dimension

to this, if I could. The area between upstream of the Daguerre Dam up to the Narrows site is extremely valuable from an anadromous fish standpoint, because approximately 50 percent of all the spawning occurs in that reach, that 12-mile reach. Timbuktu Bend in particular I think accounts for nearly 50 percent of the spawning area. So the only way for these fish to access that reach is successful passage over this damn, Daguerre Dam.

From our standpoint, we've considered for several years that the ladders that serve as passage upstream are not state-of-the-art and somewhat substandard. So this is why we have extreme concern.

And one might imagine, for instance, during a variety of different kinds of water years that the storage capacity or storage function at Bullards Bar, they might be filling the reservoir and not spilling, thus not really releasing that water down in a flood flow magnitude that's not under control, and that could affect the spawning conditions down in that Timbuktu Bend. It would also affect how the ladders operate and whether or not there's, you know, sufficient flows so fish can actually access the spawning areas. And it's a matter of timing and delay that can occur that could have rather serious effects on a run of salmon.

MR. WHITE: Are there other project facilities between Narrows 2 and Daguerre that could impact project effects on fish passage at Daguerre? That is, are diversions in there? And forgive me, I've read it, I can't quite remember what diversions are there.

MR. BOWLER: Do you guys need a minute?

MR. LYNCH: No, I think we're okay now. I apologize. Was there a question for us?

MR. BOWLER: There is a question.

MR. WHITE: The question was, I'm trying to remember, and I did read it, but can you refresh me as to are there project facilities between Narrows 2 and Daguerre such as diversions that might impact fish passage at Daguerre?

MR. LYNCH: Project studies between Narrows 2 and Daguerre? No. The last downstream project facilities is Narrows 2 powerhouse. There are tributaries downstream, there are withdrawals downstream between Daguerre and Narrows 2.

And maybe, Tom, could you maybe just highlight what some of those are?

MR. JOHNSON: Sure.

Tributaries are Dry Creek and Deer Creek, and they have pretty substantial flow to very small peaky watersheds. Withdrawals are typically April through

November time frame for irrigation. That would be PVID and the north and south diversion that's just above Daguerre. Cumulative capacity of all of those is probably around 1000 to 1200 cfs.

Just a couple of other clarifications, I think. There are two essentially unregulated forks of the Yuba, the Middle and the South Yuba. You have some impoundments very high up in the watershed, above 5000 feet, but they have, I think, 30 and 40 miles of unimpaired flow down to Englebright, so there is no ability for the project to control those in any way.

Secondly, that there is the flood space requirement in the rules for the operation of the flood space, and New Bullards Bar Dam are very closely coordinated with the Corps and the Department of Water Resources. This is an important flood control component of the Northern Sacramento Valley. And Curt can speak more to that.

And then, thirdly, most of the upstream migration that we see both of the spring-run and fall-run Chinook does occur in generally controlled periods. You might have some upstream migration in May and June before you have full control of the system, but the bulk of the upstream migration, particularly for the largest number of the Chinook moving upstream, would

occur between, say, July and October when you have controlled flows, so you typically would have spill flow conditions that would impact upstream migration, which is I think what was inferred here a little bit ago.

MR. THOMPSON: Actually, just a point of clarification. I had brought up downstream migration. And I don't think we can miss that. What would be the downstream migration time period, Tom?

MR. JOHNSON: For the early spring-run it's January-February is what we've adopted in the RMT as the typical time frame.

MR. THOMPSON: And so we would not be in controlled flow conditions then, and the Bullards spillway may or may not be operational then. Just a point that I wanted to make is the project does have an effect that time period.

MR. BOWLER: To what degree are these spill issues covered by the other studies, the DOF, the overall hydrology of the system?

MR. LYNCH: I believe in our hydraulic alteration study plan that we're doing an assessment of when spills occur, the rate of spills, the rate of cessation of spills at all the project facilities -- facility dams. Excuse me.

MR. BOWLER: So is it just a matter of putting

that together with this study that deals with the operations at Narrows relative to -- essentially putting in that study's information on spills together with this study's information that FERC's required on operations of Narrows on Daguerre.

MR. LYNCH: Well, you probably could, but probably a quicker way to get to it is through the operations model when that's put together, because that will give you different scenarios on releases and what flows are all the way down to Daguerre through different projects. And you can look up and see if they're high flows, are they tied to a spill event or natural attrition or whatever. So probably a more specific way to say what are the flows, what's happening in the project operations model.

MR. BOWLER: Do you have any response to that concept?

MR. THOMPSON: No. I like that.

The one question I had was, is there any way to get a more watershed-wide approach not only with an ops model from this project but as was correctly stated -- I think Tom and Jim both stated that flows from the Middle and South Yubas would contribute to the flows at Daguerre.

MR. LYNCH: And in the operations model those

upstream operations of those facilities are basically baseline conditions that feed into the operations model for the Yuba River Development Project, so those releases are considered as input into the models, so they're in there.

MR. BOWLER: Okay. I'm wondering is there still a dispute on this item, if it can be packaged?

MR. THOMPSON: I like the packaging idea. I think that would fix it.

MR. HASSELL: This is Joe Hassell. It does. Output for the operations model, because Daguerre Point Dam, then to Yuba River near Marysville, and down to Yuba River upstream of the Feather, it stops there.

MR. HOGAN: Yeah. You know, and our requirement was for cultivation, so -- to develop the study plan for Daguerre, I think, incorporate that packaging.

MR. THOMPSON: Just to make the point, I don't want to leap ahead to request number 8, but make the point that all of this "can" be done, but we put the request in so that it "would" be done. And the effect on fish passage here, on the anadromous resources is what we're after.

I'm sure this ops model -- it sounds great. It sounds like we can do that. But we want to make sure

that it does get done and that the assessment is of the fish passage effects at Daguerre.

With that, I think that we've got an agreement here.

MR. CRAVEN: Is that also included actually studying Daguerre Dam in the streams or is that --

MR. LYNCH: You mean the ladder?

MR. CRAVEN: Yeah. Excuse me. The ladder.

MR. LYNCH: Well, the study -- well, that FERC addressed was in their determination, but we haven't developed -- we haven't begun developing the study yet. We've put that on hold for the very reason that it was in dispute. So I don't know the scope of it at this time, because we haven't had any consultation.

Ken, maybe you can . . .

MR. HOGAN: Yeah, we did not anticipate actually going out and doing actual field study sites or fieldwork at the Daguerre facilities. We figured, you know, the Corps should have information on how their ladders and streams were designed -- or I think the YCWA streams for the canals were designed and what capacities they were designed to be most optimal at and things of that nature. And we felt that the project operations, we could have a good understanding of how does the releases from the downstream of Englebright Dam

cumulatively, how does that affect that efficiency of those designs.

MR. CRAVEN: If it does affect them, is that the responsibility of the Corps or the irrigation district?

MR. HOGAN: Well, if it's a release effect, I'd say not necessarily. I mean, we may look at potential enhancement measures, operational controls or of that nature, but I think it's premature to go there as the -- to identify that. It could be a Corps thing, but I wouldn't necessarily remove any enhancements that we would see as being appropriate for the operations of the project.

MR. CRAVEN: Have any of the issues been identified for fish passage at this point?

MR. LYNCH: I think Tom . . .

MR. CRAVEN: Or downstream migrants?

MR. JOHNSON: Can I speak to that? This is Tom Johnson for YCWA, representative on the River Management Team, and we talk about Daguerre Dam and passage there quite frequently, so I think we're fairly familiar with it.

A couple things to note. The first is that Daguerre in its current iteration was reconstructed in, I believe, the early 1960s, which was well prior to the

construction of the Yuba project. It was designed as well as could be designed at that time. I provide no opinion on how good that design is.

The one thing that the Yuba project has done subsequent to that is that, if anything, it has attenuated the hydrograph. So, in other words, whatever that Daguerre Dam facility was designed for in 1960, it did not have a million acre-foot reservoir and the ability for additional control of flows. So I'm sure the hydrograph will demonstrate that pre-project flows were much peakier, varied more widely, ramped more rapidly than what they do now.

So while the project's -- certainly its flows do have an impact on how effectively Daguerre Dam works, were the project not there, those impacts would be more egregious, I would expect.

I would imagine that if one was to design fish ladders now at Daguerre Dam with more modern knowledge and technology, they would look completely different. The Corps hasn't seen to undertake any sort of redesign or improvement of those yet.

MR. CRAVEN: But at the present time there are no documented instances of fish issues there?

MR. JOHNSON: There are documented instances of fish issues there.

MR. CRAVEN: Okay.

MR. JOHNSON: In flow conditions high and low. And it would take a little research to ferret that out.

MR. WANTUCK: On that point, I've seen data that had to do with the numbers of juvenile fish that pass through what's known as the Hallwood-Cordua diversion rated at, I believe, about 650 cfs. It's a V-screen with a bypass that goes back to the river. And the Department of Fish & Game has monitored juvenile passage through that system. The numbers I recall seeing are at times in the hundreds of thousands of juveniles passing through that bypass. So it's very effective at capturing it, rerouting back to the river. What happens to them when they exit the bypass is a good question. We've actually had to redo the bypass into a higher velocity fallway to try to reduce predation, but that's the kind of numbers that we know of that are going on there under many years.

MR. THOMPSON: Just one closing bit of information. It's our understanding that improving juvenile fish passage in the Lower Yuba through Daguerre Point Dam and downstream is something that the anadromous fish restoration program has identified as an action to go forward, so it's consistent with our request for information.

MR. WANTUCK: And finally, NMFS also has a contractor, for what it's worth, under contract now for studies, modifications or improvements of both upstream and downstream passage at that site, so while it may not be germane to the FERC process, I don't know, what we're discussing, we're still looking at upgrades for fish passage because we feel like it's not up to modern standards at that site.

MR. BOWLER: I'd like to move on to 1.4, which is passage at Narrows 1 and 2 and several other facilities.

NMFS requested hydraulic studies at the tailraces of most of the facilities, development of bathymetry and stage discharge relationships at most of the facilities, project facilities, and study of tailrace barriers at Narrows 2 and New Colgate powerhouses.

YCWA said that this request was related to anadromous fish and there are none above Englebright Dam, declined to adopt the study.

FERC determined that the Commission would obtain the information it needed for other approved studies and that this study was not needed as a standalone. And NMFS made no specific response to FERC's determination in the filing of October 20th.

Any modifications or corrections to that summary?

MR. HOGAN: This goes back to the study 7.11 that we've talked a lot about, again, limiting it to downstream of Englebright, not Colgate, and it's the hydraulics and the behavioral-type analysis that we're looking at. So those are things that I think we still want to discuss and capture.

MR. BOWLER: Okay. Do you have any . . .

MR. THOMPSON: I agree with the point on study 7.11, but the staff analysis on page 43 of the study plan determination lists a number of other studies. And then we find the rationale lacks some detail. Perhaps FERC staff could provide it here. But they state, "We find that we would have the information necessary to conduct our studies of project effects," and it just stops there.

And I think one of the concerns we have is that imbedded in this list of studies is study 7.8. And this is a -- this study plan, as I recall reading it, lists a number of studies that River Management Team may be performing, may have plans to perform. These are future studies, and I'm not sure that those studies were reviewed by FERC staff and determined that their content met, you know, FERC requirements under the regulations.

They're just simply listed. And they're told that, as I said here, FERC staff finds that they will have the information necessary to conduct their analysis.

So I think that's a concern. I think it's -- our dispute, separate from 7.11, which we've already discussed, is primarily about 7.8 and just the lack of detail in the response and determination.

MR. HOGAN: Regarding 7.8, we looked at the goals and objectives of the study plans provided by YCWA and we acknowledge that Footnote 1 -- a lot of these study plans that are being tiered off of the RMT, which is the River Management Team studies, Footnote 1 says, "If the study results that the RMT does does not satisfy the Goldman objectives of these studies, YCWA is responsible for satisfying the information needs."

We agree. YCWA is responsible to obtain the information that is required by the Goldman objectives of the studies. If the RMT studies don't do it, they're going to have to develop studies that will.

There's a whole lot of data-gathering that's going on through the RMT, and so the study information that is the objective of the studies and the study plan must be satisfied, and we'll have a -- we'll understand that better come the study reports.

MR. THOMPSON: But the plans of the individual

studies that you're talking about were not subject to FERC review --

MR. HOGAN: That's correct.

MR. THOMPSON: -- for example, for their content requirements?

MR. HOGAN: That's correct.

MR. WHITE: What's the timing on the deliverables for the studies that do exist? Is it at least going to have it fast enough to inform decisions that need to be made here?

MR. HOGAN: Our understanding is that they will be ready. And if not, the applicant will have to go out and develop a study. The information is part of our requirement, and before the Commission can accept the license application, the information has to be provided.

MR. THOMPSON: I would add one thing also, that our concern was with the lack of detail of explanation here, but also that the second part of the sentence is that the OEP staff is saying they would have the information necessary to conduct their analysis of project effects on the federally ESA listed salmonids in the Lower Yuba as well as essential fish habitat in all project-affected stream reaches.

And this might be a good point for us to say one of the reasons we're concerned about that is that

there have been continuing errors, we think, that require correction about where EFH is in the Upper Yuba River watershed.

And so, for the panel, I wasn't, until I got this present job, completely, you know, aware of what EFH is, but it's essential fish habitat, it's identified for Chinook salmon in the Yuba River watershed under -- by the Pacific Fishery Management Council.

And it's important to note that's Englebright Dam is unique in that it is on an exceptions list. It's the only dam that Pacific Fishery Management Council placed on an exceptions list, which they're saying it's not impassable for purposes of identifying essential fish habitat for Chinook, which means that all of the Upper Yuba River watershed upstream to the natural migration barriers, the gradient barriers, is essential fish habitat.

The licensee's applicant's PAD incorrectly describes that, and we attempted to correct that, and if you want to make note of it, it's corrected in our comments on PAD. It is in Enclosure C. We put an entire enclosure on Magnuson-Stevens Act consultation, and it describes where the EFH is.

So we had a concern here that were they going to study in the right places if EFH was not correctly

identified here.

MR. HOGAN: Just to clarify, I think we correctly clarified it in our scoping documents 1 and 2 to be consistent with the entire Yuba River watershed, so . . .

MR. THOMPSON: That's good, but I think licensees filed a -- well, we filed our notice of study dispute and then there was a follow-on filing that the Applicants have the privilege of filing, and that contained the same errors in EFH designation, so we wanted to correct that for the panel so that you know that. It appears that the mistake is that NMFS is attributed to basing our EFH knowledge on a document that we did not write.

So the point is, is that I believe the Applicants say, for example, that EFH extends upstream to near the confluence of the North Yuba River and the Middle Yuba River. That's not true. It would go beyond there and it would go beyond Our House Dam, so it would be in the project-affected area there as well as upstream of Our House Dam. So that's an important point. The EFH also would extend upstream on the North Yuba to the base of Bullards Dam, which is a project facility, too.

So we just call your attention to that

Enclosure C in our comments on PAD and you could look it over.

And thanks for that clarification, Ken.

MR. HOGAN: And in the scoping document, too, we drew the line on project effects on EFH, meaning we're not going to be looking above, you know, the high water mark of the reservoirs in the Upper Yuba, is there a project effect upstream, but from there down we are concerned and expect an analysis of the EFH on all project-affected stream reaches.

MR. BOWLER: Jim?

MR. LYNCH: I apologize if there's confusion. We agree that EFH extends at least from Our House on the Middle Yuba down, downstream, and on the North Yuba River from New Bullards Bar downstream at least -- it's upstream of that as well. We agree with that. We apologize if there was confusion on it. And we intend to develop our EFH assessment based on that.

MR. BOWLER: Okay. Now that we agree on where the EFH is --

MR. WANTUCK: It's closer, but I'm not sure it's the exact footprint. I don't know if we need to do it now, but we can furnish the exact footprint.

MR. BOWLER: My question is, does it have an effect on your issues of dispute with 1.4 or Element 4

of Request 1?

MR. THOMPSON: I think we've made the clarification, and if these evaluations are done within EFH, because it's identified Chinook salmon habitat and Chinook salmon EFH includes migration habitat, spawning habitat, holding habitat, rearing habitat, and so all of those things do need to be evaluated.

We point out that in the final license application the applicant will be required to produce a draft EFH assessment of the project's effects. Without adequate information, we're not sure what's going to go into that report. And then following on from that there will be some consultation between FERC and NMFS on EFH effects, sort of concurrent with our ESA consultation.

So we're looking back at this study and we're concerned that the adequate information is collected.

MR. BOWLER: I'm going to ask the FERC staff if with this context of the EFH is the set of studies still adequate to provide the information you need to do your analysis?

MR. HOGAN: We believe so, and with the analysis that we intend to provide. Whether or not NMFS feels that it's adequate I think is in dispute, and I'm not hearing where what we're providing is lacking.

MR. BOWLER: Right. I just wanted to make sure

that the discussion of over the spatial area didn't change.

MR. HOGAN: No, no.

MR. WANTUCK: This goes back to territory recovery at the outset. You know, it speaks to a reasonably foreseeable action of fish passage into the upper watershed and it's the basis of why we asked for those studies above, and I think we've already covered it. You know, it's just another aspect of what we consider to be a reasonably foreseeable action, the fact that this is -- the upstream territory is designated essential fish habitat, and this is something that was done by the Pacific Fisheries Management Council under Amendment 14 of the Magnuson-Stevens Fishery Conservation Act, so, you know, it's a matter of legal standing.

MR. HOGAN: I think the studies that the applicant has proposed and are required by the determination are extensive regarding the habitat upstream of Englebright and downstream, and that information that will be generated will provide sufficient information to prepare an EFH assessment.

MR. CRAVEN: But if I heard this right, NMFS is not sure the level of detail is in the study plan. Do you actually address those impacts?

MR. THOMPSON: I think so. I mean, if the panel would look at proposed study 7.8, it will list the -- it will list the number of studies that are going to be performed or are in some phases, you know, in the process. But they don't -- they don't outline the study plan for all of those components, so they sort of nest -- we have a nested situation where you have a study plan which is planning to take information from other studies. And that's difficult for us to understand, even though -- well, yeah, I'll leave it there.

MR. CRAVEN: Well, how could that be clarified?

MR. LYNCH: 7.8 deals with CESA and species downstream of Englebright.

MR. THOMPSON: I used that as an example. There are --

MR. WANTUCK: That's the one, yeah.

MR. LYNCH: So you're saying in terms of EFH assessment, which is primarily upstream of Englebright?

MR. HOGAN: It's both.

MR. LYNCH: We'll also be handling critical habitat as well downstream. There's a bit of an overlap in BA, I think. Probably more depth than an EFH assessment would be. So I guess --

MR. THOMPSON: But all these other studies,

Jim, that are listed here, I think we'll probably cover this as we move on to NMFS request number 8, the synthesis study. It's -- once again, when you do an instream flow upstream of Englebright reservoir, you don't do it for anadromous fish, an instream flow assessment that's not done for anadromous fish on the basis that they're not there, for example, or some other study saying we're not going to talk about this in terms of its effect on anadromous fish species. This is why we put NMFS request number 8 in. And we're sort of -- it's sort of reflected in our concern here as well is that -- you know, the FERC makes the statement that we think we'll have enough for both ESA and EFH assessments. And it's not entirely clear to us. It's sort of a "Trust us, we'll do it."

And that's really what the bulk of our dispute was, the lack of clarity. And I don't know how we can -- I think we can wait and bring it up in request number 8 to discuss it some more.

MR. BOWLER: Okay. Let's do that. 1.5 I like. Get rid of that one quickly.

MR. THOMPSON: We'll put more of those in next time.

MR. BOWLER: 1.6, Passage Upstream of Narrows 1 and 2 and other facilities.

NMFS requested a study to build on previous fish passage studies and provide more detail, I think, particularly the study that you provided to us from MWH. Subjects requested for analysis included removal of Englebright and Daguerre dams and fishway concept, engineering feasibility studies for a range of fish passage concepts for reaching the upper basin.

YCWA argues that they do not own Englebright or Daguerre and there are no anadromous fish above Englebright, so no nexus.

FERC covered this under its general discussion about lack of nexus at the beginning of its response to Study Request 1 as was discussed earlier today. And NMFS did not respond to FERC specifically in the October 20th dispute filing.

Is that a reasonable characterization of the request?

Okay. This one pretty much follows through issues we've discussed already, I think.

MR. THOMPSON: I think it does. I think if the panelists would look at the Montgomery, Watson, Harza report, in essence I think our Element 6 was a request to build on it, on the existing information.

And as we pointed out, project facilities on those little electronic copies of that report you'll see

that we used yellow highlighter to show you every instance where a project facility is considered by Montgomery, Watson, Harza.

And so we were hoping that this first step of a conceptual engineering study would be -- there would be some follow-on to it. We thought, you know, this was done -- this was funded by NMFS independently, outside of the licensing process.

MR. WANTUCK: I'd like to add just another detail, if you'll bear with me.

The reason that we funded the study stems from an earlier relicensing in the same watershed, the Yuba-Bear and Drumm-Spaulding area. We asked for a series of studies much like we're asking for here, were denied by FERC on the grounds that there's no project effects to anadromous fish by those particular projects.

Because NMFS has developed a recovery plan for the Central Valley for listed species, and because this watershed is a Corps 1 priority for reintroduction of fish into the upper watershed, we commissioned taxpayer dollars to begin down the road of getting this kind of information.

At the time we felt like this should have been incumbent on the licensees under the Federal Power Act to expend their dollars to study -- to do studies that

we asked for. That was not done; therefore, we took this rather unusual step of, as I said, commissioning a study with taxpayer dollars for something that we felt was a licensee requirement.

MR. BOWLER: Jim?

MR. LYNCH: The report -- in the report MWH considered those facilities that could potentially block fish passage and address them. Wasn't that required in the scope of work that NMFS put out, that they do that, to identify those facilities and address them as fish passage?

I mean, NMFS didn't -- I think Larry said that these facilities were identified as fish passage barriers by MWH. My understanding from reading the scope of work that was put on the street was it said these are fish passage barriers and address them for fish passage facilities. NMFS identified them and the scope of work said to come up with designs.

MR. BOWLER: I don't think the panel needs to know those details to work on this topic.

MR. LYNCH: All right.

MR. BOWLER: Let's go on to 1.7, Transferring Passage at the Four Impoundments and Dams.

NMFS requested detailed temperature, bathymetry, and hydraulic information for design of

potential fish passage facilities, particularly downstream facilities. NMFS wants this information collected for the intakes at New Colgate, Narrows 1, Narrows 2, and at the tops of the pools of the impoundments. NMFS wants measures to prevent the entrainment of fry and smolts included as part of the study.

YCWA declined to adopt the study again on the nexus argument.

FERC again covered this in its general discussion at the beginning of its response to Request 1, and again, NMFS didn't have a specific response in the October 20th notice of dispute filing.

Any corrections or modifications to the summary?

MR. THOMPSON: (Shaking head.)

MR. BOWLER: Anything specific to this one? I think it falls under a category we've worked on.

MR. THOMPSON: It really does. We didn't provide a specific response because it was one of those that's clustered, and we've already discussed that.

We would highlight that there's been some confusion that NMFS didn't ask for any entrainment studies, and we'd just emphasize that in this request we did. It does address entrainment as well as entrainment

is one of the passage issues on this table and a key, and all of the facilities where entrainment might be an issue is also in this table.

MR. HOGAN: I'd like to point out that we did require an entrainment study as it pertains to the tunnels at Our House and Log Cabin facilities.

Also, Fish & Wildlife Service had requested a study for downstream migrating O.mykiss that may be exhibiting anadromy or attempting to exhibit anadromy, and in our requirement for the study development, which was different than what YCWA had proposed -- in fact, we required they develop a study that mimicked what Cal Fish & Game was requesting, which was PIT-tagging a thousand fish in the upper reservoir or above Our House and Log Cabin, and we felt that if there was a migration being demonstrated that Fish & Wildlife Service was seeking, I mean, it was going to cover a few different things. One, is there an entrainment issue through the tunnels that Cal Fish & Game and Forest Service is looking for; two, it would also inform whether or not the O.mykiss in the upper watershed were trying to demonstrate anadromy, and -- because ideally, with a thousand PIT-tagged fish, you ought to be able to see a spike in potential migration and look at that data and demonstrate whether or not there was some type of

anadromy being demonstrated.

If that were the case, we said, you know, further study on these other entrainment issues may be warranted, but until we know whether or not there is a potential issue here, that additional entrainment study at Bullards Bar or Englebright was -- an entrainment at those facilities was premature.

So we didn't say we're never going to do that; we just wanted to know first is there a potential project effect on a fish trying to migrate out of the system.

MR. WHITE: Are there reservoir predation studies planned for reservation?

MR. HOGAN: Independent of predation studies?

MR. WHITE: Right.

MR. HOGAN: No. There are reservoir population studies that are being done.

MR. BOWLER: Let's go to 1.8.

NMFS requested temperature information as it affects anadromous fish passage conditions, and specifically, NMFS wanted reservoir temperature profiles, stratification information, identification of temperature refugia, and related hydraulic information for intakes and outflows. NMFS requested the information for Daguerre, New Englebright and

New Bullards Bar reservoirs and tailwaters.

YCWA declined to adopt the study because of the nexus issue.

FERC concluded that NMFS had demonstrated a nexus to potential effects on anadromous fish below their release from Narrows 2. FERC required that YCWA address this study as part of the study it was to develop in response to the determination on NMFS's Element 1.3. FERC limited the extent of the study to effects related to the operation of the Narrows 2 powerhouse.

MR. LYNCH: Not quite accurate. We declined to perform it upstream of Englebright, but downstream we said we had a temperature model and would collect the temperature and operations data that would inform the thermal issues.

MR. BOWLER: Thank you.

Is there anything specific about your dispute that we need to understand?

MR. WANTUCK: I can start.

MR. BOWLER: Go ahead.

MR. WANTUCK: With respect to temperature differences, we know that reservoirs affect changes in temperature from a natural flowing stream, and what we were seeking, of course, in support of a potential

Section 18 prescription was things like would a volitional fish ladder operate correctly if there was potentially a difference between the summer temperature of the surface water in the reservoir versus the downstream tailwater that's discharging out of Narrows 2. Narrows 2 would be very cold, potentially you put warm water in the ladder, fish might reject that and not utilize it. So it's that sort of thing.

In addition, there are -- and this study contemplates other conceptual options that might be based on what we call collection and transport type systems where you collect adults from the lower watershed, truck them up to a suitable habitat in the upper watershed, release them, and then, similarly, collect juveniles on the way back down.

In these situations as well there are many thermal considerations in terms of how fish will react to it. And even in the extreme, if you, for instance, let salmon off in suitably high temperature water they'll die or come up with some effects that won't allow them to complete their life cycles.

So those are the sorts of things that we're hoping to inform when we looked at temperatures.

Are there other aspects that I'm missing here?

MR. THOMPSON: I think that was well described,

Rick.

I would just add for the panel that page 6-5 of the Montgomery, Watson, Harza report points to the same temperature differential issue that Rick described in the -- between Narrows 2 and the reservoir, Englebright Reservoir, and says this temperature issue should be analyzed in the next phase of analysis. So I think there's some agreement with some other experts on this issue, so take a look at that, if you would. Thank you.

MR. BOWLER: In the interest of time, I'm going to lump the next 1.9, 1.10, 1.11, 1.12, and 1.13. If we need to discuss them more, we'll save them for the end of the day.

1.9 to 1.12, NMFS requested information on fish passage conditions in South Yuba River at New Bullards Dam down to New Colgate powerhouse, in the Middle Yuba River including at Our House Dam, and from Love's Falls in the Upper Yuba River, including any major intervening tributaries and including habitat assessment. NMFS highlighted the important issues/measurements at each reach and each site. And 13 relates to introducing experimental reintroductions.

And on both of these the nexus issue was at play above Englebright Dam, and FERC required them in elements of various studies, I think, but not above

Englebright Dam.

FERC included these in its nexus argument at the beginning of Request 1.

And again, no specific responses from NMFS. I think it was part of your general response.

MR. THOMPSON: (Nodding head.)

I'll just say that when this upstream -- these upstream assessments in 9, 10, 11, 12 and in some cases in 13 as well, you know, when NMFS contemplates a potential Section 18 prescription we usually say -- we ask three questions: Are there anadromous fish downstream that we wish to pass upstream? Is there a population that needs to be passed, we think needs to be passed? Is there a feasible way to get fish upstream? And, you know, we've got the beginnings of that here. And the third is: Are you passing them to suitable habitat? And so these 9 through 13 or at least 9 through 12 speak to the third part.

So in order to adequately inform our prescription, we want assessments. We're asking for information about the upstream habitats.

There is existing information. The panel should be aware the Upper Yuba River studies report filed by DWR in 2007 -- it is filed in the licensing -- NMFS has filed it -- that assessed habitat in the South

Yuba and the Middle Yuba, not in the Upper North Yuba. But there's existing other information out there we hope to use if we don't get it here.

I'll just end it there.

The other thing I will say about number 13 is that NMFS believes that you can do a lot of study, you can do a lot of modeling, you can make a lot of predictions, but those things are informed by pilot field experiments where you place adult salmon, for example, in a watershed and see if they can migrate the existing gradient barriers at the flow that is released from a project or a series of projects.

Can they find suitable habitat? Will they spawn? Will they spawn successfully? Will the young survive to emergence, develop, and outmigrate? And that's the kind of information we were asking for in Element No. 13.

And I think it was -- a lot of it had to do with these, again, field experiments to verify predictions and move the ball down the road to: Is this information that would inform a reasonable and informed Section 18 description?

MR. HOGAN: In response, 9 through 12, Larry concentrated on habitat. I think the studies that we required will provide adequate information on habitat to

inform that.

On Request No. 13, the pilot field experiments with putting salmon above, again, that to us is tied to not a project effect, and that study itself appears to inform a management decision as to whether or not you want to put fish upstream. And that's not necessarily the applicant's responsibility; that's the Agency's responsibility.

A management decision of whether or not to take an action is really the responsibility of that management agency. FERC is not a management agency, the fishery management agency.

So if you feel that you need that information to make a management decision, we don't see that as being the applicant's responsibility.

Now, if you had said we're going to put fish up there, we need to know where they go so we need to know what habitats need to be addressed, that would be a slightly different situation, because then the management decision has been made. And that's not the situation we have before us.

MR. BOWLER: I'd like to break for lunch. The room I don't think will be locked, so don't leave your valuables here. And we'll be back in an hour and we will pick up with Request 2. And even though it seems

like we're only a small way through, the way these things are organized we've actually made good progress, and especially with a couple that have been taken off the agenda. We're in pretty good shape. So thank you very much. See you at 1:30.

(Lunch recess taken, 12:35 - 1:41 p.m.)

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AFTERNOON SESSION

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MR. BOWLER: We will resume where we left off and start into Request 2. And I understand on this one we do have some items that are not disputed any longer, which would be Element 1, Element 3 and Element 7.

MR. THOMPSON: Correct.

MR. BOWLER: Okay. We still have Element 2, 4, 5, 6, and is there an 8? Okay. So we'll start with Element 2, Request 2, which has to do with peak flow analysis.

On this item NMFS requested a flood return frequency analysis using Log-Pearson III to be performed on three data sets, including the unimpaired condition, the unimpaired condition with the project, and the current condition. The data were to be summarized in tabular form with summary information on pulse events and special attention to events that might affect anadromous fish attraction flows.

YCWA's Proposal. YCWA said they were providing this analysis, much of it in study 2.1, with the goal to characterize various metrics of hydrologic alteration due to project O&M or operations and maintenance. YCWA proposed to apply the IHA software and do peak analysis

with the USGS package Peak F2 using the Log-Pearson III. The IHA analysis was to be applied to the unimpaired and current conditions, though not to be unimpaired with project condition.

FERC's determination was that YCWA's proposal would provide sufficient information for their analysis and did not add anything to it based on NMFS's request.

And there was some commentary specific to this topic in NMFS's -- in the NMFS dispute notice of October 20th along the lines that there was no direct response in the determination -- I'm sorry. This is going back to the comments on the revised study plan, which were September 1st, I believe.

In the comments on the revised study plan, NMFS identified the concern that the YCWA proposal did not include the step of analysis of effects on salmonid attraction and immigration.

Are there any modifications or corrections to the summary?

MR. HOLLEY: Tom Holley for NMFS.

I think you've summarized it well. I think that we're satisfied that the IHA analysis is going to give us what we need for the flood frequency return analysis, but the main points that we're disputing is the comparison of hydrology that you mentioned lastly

there at the major confluences and how that attracts -- or affects immigration into those particular tributaries. So that's the main issue with this element here.

MR. WOOSTER: I think there was one clarification on your summary. You said the YCWA proposal is an IHA of unimpaired and existing conditions, and it's -- as I understand it, it's unimpaired by Yuba River Development Project but still impaired, existing conditions upstream of their project. It's not an IHA of the fully unimpaired condition.

MR. LYNCH: That's correct.

MR. BOWLER: So basically with and without the project.

MR. WOOSTER: Yeah.

MR. BOWLER: Right.

MR. HOGAN: Based on current inflows to the project.

MR. WOOSTER: Current upstream project inflows.

MR. BOWLER: Okay. Thank you.

MR. WANTUCK: I just want to point out, one of the areas of great concern that potentially could get overlooked here is this hydrology split between the Lower Yuba River and the Feather River and how that influences fish to either stay in the Feather or go into

the Yuba. And, you know, there's a lot going on there. Certainly the Feather, as you know, operating with a three million acre-foot reservoir at Oroville has a lot of influence in terms of how that flow looked. And fish are going to make decisions, you know, which way they're going to go based on flows and temperatures at that flow split in addition to up above. But I just think that that bears in mind when we're studying this.

I think probably the River Management Team is studying that in some detail, but this is one of the things we're hoping in our synthesis study to get is, okay, we've studied that, now tell us what it all means in the big picture of, you know, year in and year out salmon migrations in and out of this watershed.

MR. BOWLER: So the main issue that's in dispute is the step of analyzing the effects on anadromous fish? In other words --

MR. HOLLEY: In hydrology as well.

MR. BOWLER: Of which the baseline question?

MR. HOLLEY: Right. Just the abiotic condition of the flows for the type of these tributaries. And then, you know, after you get that, what does that mean for the fish when they capture those flow splits.

MR. LYNCH: I'm sorry. Just for clarification, Tom, you said the tributaries. Which ones are you

referring to?

MR. HOLLEY: We had listed here Feather-Sacramento tributary, Yuba-Feather, main stem Yuba South Yuba, Middle Yuba, North Yuba, those confluences.

MR. WHITE: Below Englebright or above Englebright?

MR. HOLLEY: Right.

MR. WHITE: Does study 2.1 get at the information regarding project effects on hydrology at the confluences and how it would potentially impact fish migration, anadromous fish migration?

MR. HOLLEY: No, I don't believe so.

MR. WOOSTER: The applicant's 2.1.

MR. WHITE: Correct.

MR. WOOSTER: Yeah.

MR. WHITE: Okay. Do any studies address what may be happening at the flows at the confluences below Englebright with respect to attracting anadromous fish into those different reaches?

MR. LYNCH: Paul?

MR. BRATOVICH: Paul Bratovich, HDR, consultant to YCWA.

Rick was correct. The River Management Team is evaluating differential flow regimes between the Lower Yuba River and the Feather River and the attraction of

salmonids into the Yuba River as a function of differential flow, specifically evaluating the attraction of adipose fin-clipped fish for hatchery attraction into the Lower Yuba River relative to Yuba River flow.

They're doing that by looking at the upstream migration period, characterizing weekly flow conditions between the two, calculating the differential and doing regression analyses to determine whether or not there's any significant relationship between the rate of anadromous -- adipose fin-clipped Chinook versus the flow differential.

MR. WANTUCK: And, Paul, are you just looking at this from the standpoint of upstream migration of adults? Or what about things like pulse flows that would push immigrants out of the system? Is that also part --

MR. BRATOVICH: No, the analysis to date on that specific regard for adipose fin-clipped, of course, is limited to the adults and that is attraction through the blocking system at Daguerre, so it also is somewhat conflated by the residence duration downstream of Daguerre Point Dam, but it is proving to be a very worthwhile relationship -- exercise to determine that relationship.

MR. WHITE: Does there remain an element concerning juvenile fish that NMFS is concerned with, with respect to the same question?

MR. HOLLEY: I would say so.

MR. BRATOVICH: Yuba County Water Agency and the RMT is again amassing all available information to try to develop and establish fundamental relationships between behavioral responses and variable water temperature and flow regimes. As part of that they have the rotary scoot trap data extending back to 2001, and there's been an evaluation of the rate of capture of outstream, outmigrant juvenile salmonids relative to flow patterns and an evaluation of the magnitude and rate of increase in flows associated with increases in the abundance of outmigrant juveniles captured at the RST. So in that regard there is some information forthcoming and available now regarding outmigrant juvenile salmonids and flow changes in the Lower Yuba River.

MR. WANTUCK: Is all this wealth of RMT study data going to be placed on the FERC record? And also, will it be interpreted in light of some of the types of information requests that NMFS is asking for about basic life cycle processes that affect anadromous fish, things like, you know, are we attracting adults into the

system? Are we properly, you know, encouraging juveniles to smolt and outmigrate? You know, all that. You can extend it to many aspects, as you know, floodplain inundations. Are we going to expect to see this RMT data on the FERC record in this proceeding?

MR. JOHNSON: A couple of things just for the panel, which might be a useful backdrop of what the River Management Team is.

Not too many years ago YCWA and all of the resource agencies that are jurisdictional on the Lower Yuba, plus a number of MGOs, entered into a common settlement. And we have set, very recent, what we would like to think of as fairly cutting edge flow regimes for the Lower Yuba River.

So this isn't something that, you know, the flows haven't been updated for 40 or 50 years. They were recently and collaboratively updated and a series of agreements were signed that put those into place.

The River Management Team is a collaborative effort with all of the jurisdictional agencies, including NMFS, participating. We have developed a study plan over the course of a year and a half that has been in place since 2008. We've been undertaking $6 million worth of studies that are ongoing and collecting quite a bit of information.

So with that backdrop, all of the information that the RMT produces is in the public domain. As soon as it is QA-QC'ed it's released in the form of seminars, it's put on the website. NMFS certainly has access to every bit of it in their own right.

To the extent that that information is available to be used in looking at any sort of analysis, including in the relicensing, that was always the intent, and so the RMT has its own goals and objectives in terms of what it's trying to get at.

Certainly that information can be synthesized, and then if someone wants to enter it into the FERC records, certainly NMFS can do that or anyone else can. Again, it's in the public domain and so it's not like it's hidden.

One of the things that the RMT does is it deliberately looks at the Yuba River. When we start trying to think about things like attraction flows from the -- in the Feather and the Sacramento, one of the challenges there is that the flow regime that we've developed in the Yuba is a much more natural hydrograph. In other words, it has peak spring flows trailing off through summer, lower flows in fall, whereas, a brief evaluation of flows, for example, in the Feather have very low year-round flows because of the massive

collection facility at Oroville Reservoir and then huge summer flows, which is essentially all the project water going down south.

So one of the challenges there isn't the fact that the Yuba flows are insufficient or difficult; it's that they're meeting such artificial flows in the Feather and down in the Sac that it's going to skew any of the relationships that we're likely to see.

So I just throw that out not necessarily for today's consideration, but that is, as we develop these study plans, that is something to be taken into effect, not that the Yuba is skewed but that some of these other flow regimes are skewed.

Rick, did I answer your question?

MR. WANTUCK: Well, yeah. I hope I didn't misconstrue what you said, but what I'm hearing is that this information will be become public in its own time when it's QA-QC'ed, but that YCWA does not intend to formally enter it on the FERC record, but that someone else might analyze it and put it on the record as public domain information.

And if that's correct, then I want to ask FERC, will you require the applicant to put this very relevant information on the FERC record in this proceeding?

MR. HOGAN: We have had discussions with YCWA

and all of the studies that rely on the RMT study reports we have asked that the ILP study reports have attached the RMT study reports as an attachment to the licensing studies.

MR. WANTUCK: And just as one follow-on to that, I think this will come up in our Study Request 8, this synthesis study is where it all comes together and becomes meaningful for us.

You can study hydrology, as Tom said, as an abiotic characteristic of a river, but really, what does that mean to the fish?

And we're hoping that the RMT studies will either on their own bring that level of analysis to the picture or that an additional study will synthesize all of this various information so that we can get the true picture of the project's effects on anadromous fish.

MR. HOGAN: I think we're prepared to discuss that when we get there.

MR. WANTUCK: Okay.

MR. HASSELL: As a point of clarification, which confluences did we leave out that you want in?

MR. HOLLEY: Well, that was the issue is that I didn't see this analysis being ordered to be done anywhere in the FERC study plan.

MR. HASSELL: Oh, we've got six points where

we're ordering flood frequencies to be done.

MR. HOLLEY: Okay.

MR. HASSELL: And you point out correctly that we didn't do it at the confluences. Which ones did you want done? Which confluences?

MR. HOLLEY: I listed the Feather-Sacramento, the Yuba-Feather confluence, and then above Englebright, the South Yuba-Yuba confluence, and then the Middle Yuba and North Yuba confluence.

MR. HASSELL: Okay. And when you speak of these confluences, do you want the flood frequency done just below or at both streams coming in? So, in other words, one point, two points, three points?

MR. HOLLEY: Well, it would be two points if we're looking at the streams on their own, but in sequence or in tandem temporally so you can compare at a certain point in time what the flow was like in one branch versus what the flow was like in another branch and then surmise from that how fish would react in terms of attraction into either one.

MR. HASSELL: Okay.

MR. WANTUCK: And then inherent in this I think is not just the volume of flow but the temperature of the flow, which can be very different, and the mixing that goes on there often plays a big role in how, you

know, fish decide to react to that.

MR. HASSELL: Right. I'm just trying to understand what it is you're asking for. You know, for example, at the diversions where you have a flood frequency, at Oregon Creek and the Middle Fork, you're going to see the effect of the project as it, you know, takes that chunk of water and sends it over to Bullards Bar. But down at -- and their gauge is right there. Okay? And it's very easy to do the Log-Pearson and you're going to get a very good, accurate, precise answer about what the effect of the project is.

When you go down to these confluences, you're taking two models, and you're modelling, you know, the intervening flow. It's not as -- an accurate answer of what the project is going to be. You'll be able to see it, but -- and I guess the point I was getting to, and I still don't think I understand, are you interested in the two streams coming in right above where they join, and then, after they get together, are we going to have -- are you asking for six sets of flood frequency analysis or are you asking for only after they join together?

MR. HOLLEY: It's not necessarily a flood frequency analysis question. It's just looking at the hydrology and looking at the times of year when fish

migrate through and then comparing the two streams above the confluence. I think that can tell you --

MR. HASSELL: Right. I understand that. I understand that. But in order to produce the data for 2.1, absent the interpretation of it, what output are you looking for?

You don't follow? Am I not making myself clear?

MR. HOLLEY: I guess just average daily flows, I guess, at each tributary under certain times of year, and then you can look at the peak flows as well for the two tributary branches coming in.

MR. WHITE: Upstream of the confluence?

MR. HOLLEY: Upstream of the confluence. Yes.

MR. WANTUCK: I would add one more what I would consider to be a critical confluence that's not two tributaries coming together but it's the outfall of the Colgate powerhouse with the stream flow that's coming from upstream. There's a big flow split and a lot of dynamics that go on there. That would be a very influential hydrology study there in and of itself in terms of how fish react to the rapid cycling of the plant when it's on a peaking mode and also the fact that only five cubic feet per second is required as stream flow from the Bullards Dam, and then, of course, that meets the confluence of the Middle Yuba, which has its

own diversion from Our House Dam. So there's little flow coming from upstream and the vast majority of flow routed through about a ten-mile pipe through the Colgate powerhouse, and that's a lot of peak up and down on demand electricity. So that would be a real interesting and vital study to undertake.

MR. BOWLER: Jim, and then a question.

MR. LYNCH: Sure. I just wanted to be clear, the study 2.1 has an IHA analysis, it also has a flood frequency analysis, and I think that's what you're referring to. If you are, then a flood frequency analysis, we're doing it at existing gauges with the existing database, because a flood frequency analysis, that's done at instantaneous peaks, not mean daily peaks, so to do that you actually have to have instantaneous data which GS reports. So we could go downstream and model what that might look like on a mean daily, but instantaneous can be pretty difficult, depending upon how far downstream you go.

MR. HASSELL: That's sort of like what I was getting at. That was why we went with the six stations that you selected. But they had asked for -- they had asked for this analysis to be at the confluences and we didn't do that.

MR. LYNCH: I just wanted to be clear on that.

That's why we --

MR. HASSELL: But if you do that, you've got a model, I mean, and it's not going to be -- you know, you're not going to get the peak. I mean, you're not going to get it exactly. Okay?

MR. LYNCH: You're not going to get instantaneous.

MR. WOOSTER: If I could clarify?

MR. BOWLER: Let me just ask you, there's basically six gauges?

MR. HASSELL: Six gauges.

MR. LYNCH: Existing gauges for existing flows, as far as that goes.

MR. BOWLER: Without any extrapolation or modeling to --

MR. HASSELL: Right. We did do it at the confluence, and there were some confluences that they listed in their study request, which I recognize, you know, yeah, this list is different from this list by these two -- I think it was just two confluences that were listed. And I was trying to -- my question was trying to get which confluences do you want, and do you realize that, you know, there's going to be a modeled output.

You can still do it with a modeled scenario

post-project, I mean, with project -- I should use my nomenclature straight -- with project and without project, but it's not as good as just doing it to gauges.

MR. WOOSTER: Can I clarify? We are doing a lot of -- in other study plans you are running Log-Pearson analysis of modeled data on the maximum daily average flow for each year where you just pick your largest daily flow as part of the geomorph study. I think it's part of the riparian or wood study as well.

MR. LYNCH: What you're doing with that data is different than a flood frequency analysis.

MR. WOOSTER: No, we are doing a Log-Pearson III analysis within the geomorph. That is a flood frequency analysis. That is part of the geomorph study using the modeled data for with and without project.

MR. HASSELL: And 24-hour means is what you're using.

MR. WOOSTER: The max 24-hour mean for a given year.

MR. BOWLER: What's the time step of the IHA analysis? Is that mean daily?

MR. LYNCH: The peak -- the IHA analysis is on a mean daily. The peak flow analysis is on instantaneous, which is part of the study plan. That

part, that flood frequency analysis is not an IHA analysis. IHA is one of the methods within study 2.1.

MR. BOWLER: Were the confluences -- is there any reason NMFS needs it based on instantaneous data or could it be based on mean daily data at the confluence?

MR. WOOSTER: You would use the best available data. And if you don't have the instantaneous at the confluences, you can use maximum manual mean daily as well.

MR. BOWLER: Rather than modeling up or down from the gauges, could the work that's being done for the geomorph study which is using Pearson III on mean daily suffice for the confluences and how much of it's being done there anyway as part of the geomorph study? How many nodes are there in that?

MR. WOOSTER: Well, there's seven sites, seven geomorph sites, but most of them are not at confluences.

And to further clarify, I provided I think you and Kathy a recent USGS publication that provides coefficients to adjust for Log-Pearson done on mean daily series to bump that up to the equivalent of an instantaneous series. And the Yuba Basin is a specific basin within that document that has its own adjustment factor.

MR. LYNCH: We've been uncomfortable making

those adjustments elsewhere. I'm not a hydrologist, but I know places we've tried it elsewhere we haven't been comfortable with the adjustment. That's not to say it might not work here.

MR. HASSELL: I'll give you an example. One of the -- I remember this. One of the confluences that they requested was where the Middle River and the North Yuba River come together. It's going to be modeled output from the Middle River just upstream of that confluence and from the North Yuba River just upstream of that confluence, and the confluence just below is just to be the sum of the two. I mean, it's all going to be modeled.

And you can model it and you can do run one with project and run two without project, but with the caveat that it's 24-hour mean probably.

Your model is going to run on a 15-minute time step, is it not?

MR. BOWLER: The operation is not?

MR. LYNCH: I believe it's a daily time step. I'm looking at that right now.

MR. HASSELL: But it is modeled --

MR. LYNCH: Yes.

MR. HASSELL: -- information as opposed to measurements.

MR. BOWLER: So upstream of Englebright the issue is you want the confluence -- you want the peak analysis at the confluence.

MR. HASSELL: They asked for where the Middle and the North Yuba come together upstream. That's one of the confluences that I recall that they asked for.

My question a few minutes ago was what other confluences are you interested in.

MR. BOWLER: And you listed them.

MR. WANTUCK: And I added, whether you consider it a confluence or not, I added the Colgate powerhouse.

MR. HASSELL: We can talk about that.

MR. BOWLER: And then down below Englebright, and sort of the same issue, but there may be some existing information that contributes at least to the anadromous fish component in terms of what the Resource Management Team has done on Feather and Sacramento -- Feather and Yuba and Sacramento.

MR. WHITE: Did the plan work the RMT is doing address temperature?

MR. BRATOVICH: Yes. The RMT is looking at attraction flow and temperatures as well from the Lower Yuba River relative to the Lower Feather River.

MR. BOWLER: And the YCWA study 2.1, the six gauges -- FERC required the six --

MR. HASSELL: Required six gauges. And it was proposed and approved by FERC.

MR. BOWLER: Okay. And some of those at least are above Englebright.

MR. HASSELL: Yeah. Yeah. Two are below and four are above.

MR. BOWLER: What were you going to say, Jim?

MR. LYNCH: The model is an hourly time step model with the capability of post-processing below the peaking facilities if we wanted to look at ramping and looking at instantaneous data, so it's a daily time step model.

MR. LILLY: You said hourly. You meant daily, though.

MR. LYNCH: It's a daily time step.

MR. LILLY: He misspoke.

MR. LYNCH: It's not hourly. Daily. I'm sorry.

MR. WHITE: A question for NMFS. John, you want to ask a question first?

MR. WOOSTER: I did have clarification for Joe.

You had asked what the output would look like that we wanted to see in addition to the peak flow analysis, and I'll read you from the study plan:

"Any flow greater than a 1.0 year return

interval or greater than the unimpaired average monthly maximum flow will be considered a pulse flow. The date of the beginning and end of each occurrence of a pulse flow should be recorded along with the magnitude and duration of each pulse flow event. A table comparing the frequency, magnitude and duration of the pulse flows documented for each scenario" -- and that's flow scenario -- "should be prepared at all the locations of interest listed above."

So that's the kind of output we were looking for in addition to the peak flow analysis.

MR. HASSELL: When you said the study plan you meant your study plan?

MR. WOOSTER: Our study plan. Yes. Element 2 within NMFS.

That was a clarification for Joe.

And I actually had a question for Paul. When you were describing the studies down at the Feather and Yuba confluence you said -- one of the last things you said, you were looking at it relative to changes in Lower Yuba flow changes, and when you said flow changes, did you mean just variability in the flows, existing flow schedules or did you mean changes in flows of existing versus unimpaired total or unimpaired by the YRD?

MR. BRATOVICH: Yeah. John, actually, it's differential flows between the Lower Yuba River and the Lower Feather River, not necessarily changes or rate of change, per se. It's just a weekly expression of the difference in flow between the two. And we're using actual gauge data for our evaluation of upstream anadromous ad-clipped fish attraction. We're using the gauge at Marysville and Gridley. Unfortunately, that's about 20 miles upstream, so there's some additional accretion flow perhaps, but we're using actual data, not modeled data.

When I was talking about the previous RST work and some of the analyses associated with juvenile migration that was rate of change in flow in the Lower Yuba River at Marysville itself, day-to-day change.

MR. WOOSTER: Is there any component of the analysis that you'll produce that could be extrapolated to looking at existing flow conditions versus unimpaired by Yuba River Development Project?

MR. BRATOVICH: I have not anticipated doing that at all for the RMT.

MR. WOOSTER: Could someone else outside the RMT?

MR. BRATOVICH: I think we're really focusing on trying to establish those foundational relationships

from empirical data. If one were able to extrapolate or apply those relationships to different scenarios, I guess that remains to be seen, the veracity of that application, but I don't see why anything -- certainly wouldn't preclude or prohibit anyone from attempting to do that.

MR. WHITE: Would NMFS explain, as I understand it, with or without project baseline conditions being proposed, but not a true unimpaired scenario, and can NMFS explain why the true unimpaired scenario would inform their analysis of the project's effects on fish?

MR. HOLLEY: We decided that we're willing to live with the current project versus the unimpaired by project scenario at this point.

MR. WHITE: So you'd live with the two scenarios?

MR. HOLLEY: Yes.

MR. WANTUCK: With respect to the hydrology.

MR. HOLLEY: With respect to the hydrology, yeah.

MR. CRAVEN: This is for FERC, I guess. In your analysis you mentioned that YCWA's proposal would provide sufficient information for your analysis. In light of the discussions that we've had here on this subject, do you still feel that way or . . .

MR. HASSELL: I'd say yes, but it's -- what I was focusing on on this discussion right here was the hydrology. I was not really focusing on what you were talking about, the effects. And I'll let Ken speak, because he can speak more to it than me, but it seems to me that if you have the hydrology and you have the temperature models and you have, you know, your instream flow models, et cetera, et cetera, then the answer is -- you've got to apply some analysis to it, but the answer is yes.

MR. HOGAN: I mean, if we're interested in what the resulting stream flow is below two confluences and we're going to know what the flow is in these streams based on the studies that were required, I'm not sure what measuring at the confluence is going to get you.

I mean, you should still be able to get, you know, percentages of flow, where it's coming from and things of that nature to do the analysis that NMFS is looking for, so I'm not -- I'm not sure why having an actual measurement just upstream of the confluence is going to be that much better given the cost of then using the flows as gauged or measured at the gauging stations and then coming up with a percentage of flow to make up the stream reaches, so . . .

MR. WOOSTER: A water balance model where a lot

of this model data is going to come from is going to have a node upstream of each tributary confluence that's going to be --

MR. HASSELL: It does. It does. It has all the confluences that I was talking about. It's got one above and one at the other stream coming in, and -- but it sums the two to get the second -- the third.

MR. WOOSTER: But you've got the individual parts as well.

MR. HOLLEY: To answer your question, Ken, I think, we're not proposing to go out and collect new data right at those tributary models. We're thinking that using the model will be sufficient for this purpose.

MR. HASSELL: The modeled output.

MR. HOLLEY: The modeled output. Above the confluence.

MR. HASSELL: To analyze that.

MR. WANTUCK: Yeah.

MR. THOMPSON: We want it done.

MR. HOLLEY: Yeah. Exactly. We want the analysis of how it affects fish, and we didn't see that in the determination.

MR. HOGAN: So here's the disconnect that we've been having and we've been discovering in some of our

conversations where, you know, our study plan -- the study plan is designed to get at what information needs to be done to evaluate project effects. How you use that information is analysis. And so we look at, you know, what studies need to be done, get the information, how you analyze that to us is a little bit outside the realm of the study plan determinations. We want to make sure we're getting the information that will support the analyses that we need to do, so . . .

MR. WOOSTER: But we're talking right now the flow data is just going to look like a column in the water ops model. We're asking for the statistical analysis of those nodes within the water ops model.

MR. WHITE: So it's not necessarily analysis; it's a different manipulation of the data.

MR. WOOSTER: (Nodding head.)

MR. BOWLER: Doesn't the IHA software produce those types of statistics?

MR. HASSELL: The IHA -- it's going to produce a different set of statistics than the flood frequency analysis.

MR. BOWLER: Right. Sure.

MR. HASSELL: And I believe they have proposed two sets of IHA data. They're running them in series. They're creating a false daily set without project and

then they're going to compare that with project. And yes, all those nodes are in the IHA, are going to be -- correct me if I'm wrong, please -- are going to be subjected to the full set of IHA, 32 statistics of that IHA.

MR. LYNCH: Yes. At the nodes identified in the study plan, yes. And typically we try to use a gauge location so we're comparing actual data to synthesized rather than synthesized to synthesized --

MR. HASSELL: Right.

MR. LYNCH: -- where you run into some real problems when you start doing that.

MR. HASSELL: You know, we're talking about Log-Pearson analysis versus IHA analysis. They proposed to do the IHA at all of those -- I don't know how many stations there are, looks to be like about 50 -- but they had proposed to do this Log-Pearson analysis at the six gauge stations.

MR. WANTUCK: My understanding was -- am I right, Tom? -- that you didn't -- we didn't detect in the study plan determination where FERC says do this particular study. Is that what you're saying?

MR. HOLLEY: Correct. All we're getting is the analysis.

MR. HOGAN: What I was just hearing is the data

is going to be collected and you're comfortable with the fact that the data is going to be collected, you just want to make sure that an analysis of percentage of stream flow and temperature effects is done downstream of the confluence.

MR. WANTUCK: Yeah. And this goes back to a question Mr. White raised in the morning session, but it has to do with scheduling. You say, rightfully, that the analysis comes later in your NEPA process, but before you engage in that, we reach a point of determination about Section 18 prescription. And so without having the analysis at hand, we can't be informed with that analysis. In other words, if we're going to wait until you do NEPA, we've probably already reached a decision point that the statute forces us to make.

MR. THOMPSON: Well, and I would just add to that, Ken, my understanding of the process is that we're here to do study to assess project effects, and when we start saying no, we're doing studies to collect raw data, that's not my understanding. Any scientific study collects data and it performs analyses.

You know, it's all summarized later. There's a greater summarization of analyses that's done, for example, in a NEPA document. But to say that a study

report will come out and it will only give you tables of numbers, for example, I don't buy that argument.

My second point -- well, I'll stop there. I really have a disagreement there. I think we're parsing out here and I really think that what we're asking for is not to hear that "can" be done. We understand it can be done. We want it to be done. And we don't think there's any reason not to do it.

MR. HOGAN: Larry, going back to the analysis issue, yes, the individual studies that we're requiring, there has to be some analysis. If we're doing a macroinvertebrate study, there's going to be an analysis of macroinvertebrates.

MR. THOMPSON: I agree.

MR. HOGAN: Now, what I was trying to get at is there are other studies that are going to be done, say, water quality, that are going to be able to be used to look at how water quality's affecting the macroinvertebrates. That analysis comes in the license application. It's required by the regulations that once you've collected your studies on the individual components of the project's effects, there is a synthesis analysis of how the project is affecting all the resources, and if it's affecting the water temperature, which is affecting macroinvertebrates or

fisheries, that's where that analysis comes in.

And that's what I meant to say. I didn't mean to say that there's no analysis in the individual study reports on this raw data. That's not what I was trying to get across.

But you can't look at -- you can't conduct the synthesis analysis that you're looking for until all the individual studies have been completed and the reports have been done and then you can look at it going, okay, how is the project having an effect across these resource areas, across these resource issues.

And that is expected to be done. It is expected in the license application, the draft license application. It's part of the requirements of the regs, how do you look at it, and I think when we get to the synthesis analysis that you're asking for specific to anadromous fish we'll share kind of what we've talked about with you and YCWA on that approach, but we're obviously not there yet.

So I think, you know, what I'm hearing, though, is that the data is going to be collected, we're going to be able to do, you know, what is the project effect on the stream flows downstream -- upstream and downstream of the confluence and what's the effect on temperature, and that's what I'm hearing that's what you

want.

MR. WOOSTER: What you haven't -- there isn't a commitment to look at the hydrology data at the confluences. There's no IHA node on Oregon Creek right above Middle Yuba. There's seven gauge nodes and three synthesized nodes in the IHA analysis.

MR. HOGAN: Mm-hmm.

MR. WOOSTER: So not all the nodes within the water ops model that we'd like to see analyzed are necessarily going into the IHA model.

The part about the pulse flows that we've asked for at these various tributary junctions are part of any study plan. The data's there.

MR. CRAVEN: To try to clarify just a little bit, are you saying all the information that he's talking about will be available, and also the analyses, in your summary?

MR. HOGAN: What I understand that they want for analysis is what is -- how is the project affecting stream flow, how does that also affect water temperature, and what is the resulting percentages, you know, from each stream downstream of the confluence and what's the resulting water temperature. And if that's correct, yeah, I think we're going to have that.

MR. CRAVEN: With the additional confluences?

Is that . . .

MR. HOGAN: Well, I -- Joe, you want to help me out here?

MR. HASSELL: I'm sorry. I was looking up something.

MR. HOGAN: We should have, with the data that's being done, or collected, we should know the flows coming down the project-affected stream reaches, water temperatures in those project-affected stream reaches, and resulting water temperature inflows below the confluences.

MR. HASSELL: Yes, we should. There are sufficient temperature stations modeled to know all that.

MR. HOGAN: So I don't know if we're talking past each other, but . . .

MR. HASSELL: Now -- may I? You said that the IHA is not being done on all of the -- is only being done on seven?

MR. WOOSTER: The study plan I have open says seven gauge sites and potentially three synthesized sites.

MR. LYNCH: That's correct. Page 2 of 10 and 3 of 10. That's what you're looking at?

MR. WOOSTER: Yeah.

MR. LYNCH: But there is an IHA site on Oregon Creek below Log Cabin diversion dam. The seven sites are at existing gauges.

MR. BOWLER: That's the peak flow analysis or the IHA analysis?

MR. LYNCH: No. I'm sorry. The study 2.1 hydraulic analysis has really three components to it: An IHA analysis at certain sites, a flood frequency analysis having to do -- referring to the peak, and it has a ramping rate analysis, so there's three focuses.

MR. BOWLER: What was the last one?

MR. LYNCH: Ramping rate. Three separate components in that study.

MR. BOWLER: And the locations of the nodes for all three are --

MR. LYNCH: Are slightly different depending upon what you need for data.

I take it back. There's a fourth. There's also a spill analysis.

MR. BOWLER: Okay. So is it clear if we go back to 2.1 where the locations of those nodes are or do we need to ask for that to be summarized for us? Is it already in there?

MR. HASSELL: It's in there. Is it under section 4.1? Is that correct?

MR. LYNCH: Mm-hmm.

MR. HASSELL: And I guess they picked, you know, they picked right below, you know, the major alteration occurs, obviously, right below the diversions, right below Bullards Bar, and so I guess they got the big ones, and Yuba River is also measured, but they want -- NMFS wants others.

You know, IHA analysis, since we're not talking about the fully unimpaired thing, I thought that was going to be the major argument, but if the issue is an insufficient number of nodes and you've got modeled output, it's not -- it's not difficult to add additional nodes.

IHA analysis is a -- I mean, it's just run the software. It's very -- so I'll put it like this. I did not realize that, from your comments, that there were insufficient -- you thought there were insufficient nodes here for the analysis. These are -- you know, these are going to show you the big ones.

If you go back to what Rob was -- other comments you've made about generating data tables and tables and data, you're going to get tables and tables and additional -- each additional node you do, you're going to get an additional table, additional information. I'm not sure that these are not

sufficient. But I will say it's not a lot to ask to add additional nodes.

MR. WOOSTER: I think I ought to clarify something. It's not so much that we were asking for these other nodes to be put into the IHA analysis. The IHA came up when you started drawing analogies that the IHA was going to give us a bunch of information. We were asking for specific pulse flow information at the nodes, and then you mentioned that the IHA was going to give us a bunch of information at these other places. Our request isn't asking that these additional nodes be added to -- at other input stations in the IHA.

MR. HASSELL: Well, why --

MR. WOOSTER: I suppose that would be one possible way to get at it.

MR. HASSELL: Explain to me why -- IHA, I guess it divides up four groups of statistics, one dealing with pulses.

MR. BOWLER: Basically it's a big fancy base flow separation that does peak flow separation, too.

MR. HASSELL: Why is that not sufficient?

MR. WOOSTER: It would be an alternative to use the IHA to get at our other nodes, but that's not what we asked for. We asked for specific pulse flow information at these various nodes.

MR. BOWLER: The question isn't really what you asked for; the question is what you need. So what information do you need to support this analysis? Do you need -- is the IHA output sufficient or is the need for some reason a need to be a Log-Pearson analysis? What's the fundamental difference between the two?

MR. WOOSTER: I mean, yeah, I think taking these nodes and running them through the IHA would provide us . . .

MR. BOWLER: So one potential solution would be to have a little bit more refinement to the model that generates the hydrographs that go into the IHA so you have IHA at the confluences, above each confluence that you're concerned about.

MR. WOOSTER: Yeah. I mean, the model already should be generating the hydrograph. The water ops model should be generating the hydrograph at these spots.

MR. BOWLER: And then so that leaves -- if that were the solution, if we agreed to that, and I'm not saying we do, that would leave the issue of whether it analyzes the effects on anadromous fish is your understanding?

MR. HOLLEY: (Nodding head.)

MR. WOOSTER: (Nodding head.)

MR. BOWLER: I'd like to wrap this up, but any other . . .

MR. LYNCH: Just to be clear, that the model will generate a base case, which is hydrology for the -- whatever we have -- 34-year period -- hydrology period of record, it'll generate a base case as if existing conditions, existing operations have operated in that 34-year period. So that's not the same as what actually occurred, because operations have changed. And then we will also generate different scenarios or flow conditions.

So I just want to be clear when we're asked to do something that we know what it is we're comparing, because it's very different to compare existing conditions with the past 30 years to a synthesized hydrology and then a modeling of that synthesized hydrology, comparing it to another modeling of another synthesized hydrology. I want to be sure that what we're comparing is giving you what you want and it's not so confused at the end, we don't know what we're comparing.

MR. BOWLER: Is that NMFS's understanding of what the two scenarios are? I know it's not what you originally asked for, but at this point is that your understanding what you're getting out of . . .

MR. WOOSTER: Can I ask a clarification question?

MR. BOWLER: Yeah.

MR. WOOSTER: In study -- in 2.1 the three synthesized regulated stream flow stations that are here in the IHA analysis, are those synthesized base case or are they synthesized what actually happened over the last 35 years?

MR. LYNCH: They'd be synthesized what's happened over the past 35 years.

MR. WOOSTER: So they're not a base case.

MR. LYNCH: No. We need to be careful with that phrase. I probably should -- let's compare baseline to base case. Baseline is, if you will, the regulated hydrology over the past -- measured gauge over the past 35 years. One way to look at it. If you model that and say what would those numbers be if you operated the project as it's been operated in the past few years, that will give you different hydrology.

MR. WOOSTER: Sure.

MR. LYNCH: So maybe -- so base case to me is that modeled base case, the latter. Baseline is the former, what actually was measured. So I just want to be sure we're giving you what you want when we do it.

MR. WOOSTER: So these three are synthesized

baseline.

MR. LYNCH: Yes. Thank you.

MR. WOOSTER: Mm-hmm. And at the other nodes of interest, would we be able to pull synthesized baseline out of the water ops model?

MR. LYNCH: What are the other nodes of interest? Are they the ones that we have listed here? Because the other ones listed are actually --

MR. WOOSTER: Tributary confluences.

MR. LYNCH: We'd have to synthesize the data then, so it would be adding additional -- these three nodes we'd have to add a bunch more synthesized data. It means we'd have to synthesize mean daily accretion for 34 years of record for every day to get what the flow -- we'd add it to the upstream gauge, synthesize the mean daily accretion, add it to that to get to that, so it's a considerable amount of work.

MR. WOOSTER: But you should have that accretion as part of calculating your base case. The base case is just altering project operations, so it's -- to reflect how you're currently operating.

MR. LYNCH: You may not have it at each one of those nodes.

MR. WOOSTER: You would need to have the accretion at each node above each tributary confluence

if you're going to use a water balance model to sit there and sum up the flow as you move downstream.

MR. LYNCH: The major nodes, yes.

MR. WOOSTER: In accretion-depletion terms, it should be already calculated as part of the base case. And then to get from base case to baseline --

MR. LYNCH: Right.

MR. WOOSTER: -- you just wouldn't reflect the project's operations as it is today but as it historically was through the 35 years.

MR. BOWLER: I think it's the reverse. Right?

MR. LYNCH: I think baseline would be as it would actually be --

MR. WOOSTER: Yes.

MR. LYNCH: -- measured and base case would be as it's modeled.

MR. BOWLER: I think we have enough information, or at least as much as we want. And the only other thing I would ask is if somebody can, as soon as possible, maybe YCWA could tell us how many nodes, if we were to address the confluences that NMFS requested, how many of them are in and how many -- in the current model and how many would have to be added.

MR. LYNCH: It's much more complicated than that. I believe what you asked for were nodes all the

way down to the Sacramento and the Feather. Our operations model does not go to the Sacramento and the Feather confluences.

MR. BOWLER: Well, assuming we -- if we were to default to the RMT's work down there, if we just dealt with the nodes up in the model area.

MR. LYNCH: To the Feather River?

MR. BOWLER: Yeah.

MR. LYNCH: To the Yuba River down the Feather, we could certainly do that.

Maybe at a break, maybe, John, we can just look at those nodes, make a listing?

MR. WOOSTER: Sure.

MR. WANTUCK: This sounds like an area maybe we might convene a follow-up call and try to iron this out. I'm sensing there's just a little bit more to go, but we're not quite there yet perhaps, and we may be able to solve this in advance of the panel's decision.

MR. LYNCH: I think it may only be about six locations, I think, so we could maybe take five minutes at a break.

MR. WANTUCK: Oh, okay. Well, do it at a break then.

MR. LYNCH: John, does that sound right?

MR. WOOSTER: Yeah, about the number of nodes,

I think.

MR. LYNCH: Mm-hmm.

MR. BOWLER: 2.4, Ramping. NMFS wanted a ramping study applying 15-minute data below the New Colgate and Narrows 2 powerhouses and one-hour data below Log Cabin and Our House diversions. For both up and down ramping, NMFS wanted exceedance analysis of flow rate change and identification of peak rate changes. NMFS wanted the flows associated with a two-dimensional hydraulic model based on a new digital elevation model, a DEM. The results were to be applied to effects on anadromous fish migration and stranding. NMFS wanted this effort to be associated with the dam spill analysis and validated with Acoustic Doppler Current Profiling.

YCWA declined to adopt this study on the basis that it was part of its study 2.1 and already existing.

FERC noted that study 2.1 was a hydrologic study without hydraulic conditions; therefore, it did not -- 2.1 as it stood did not provide the information requested by NMFS. FERC required that a ramping study be carried out based on potential project effects on resident species rather than salmonids or anadromous species.

Also, rather than requiring NMFS's exact,

proposed methodology, FERC required that the modeling cover basic hydraulic estimates of flow, depth, velocity, wetted perimeter, and area of inundation, and that the plan details be developed in consultation with NMFS and others.

NMFS didn't comment on October 20th, but going back to its comments on the revised study plan, September 1, they commented that the YCWA proposal addressed hydrology but not hydraulics, which was addressed in the FERC determination as well.

MR. HOGAN: Just a clarification. The FERC determination limited to Colgate, not Bullards Bar, so we did split it up, whereas, NMFS's request was for both.

MR. BOWLER: Okay. Because of the nexus?

MR. HOGAN: Because of the peaking operations at New Colgate and the potential effects on the resident species there; whereas, New Bullards Bar just has very little flow. There is no peaking.

MR. BOWLER: Any other corrections?

MR. HOLLEY: No. We're basically happy that this study plan was adopted. I guess the reason why we're continuing to dispute is we just want a little more clarification from FERC staff about how consultation is going to go forward and kind of the time

line about who will be consulted and who will ultimately make the final decision in terms of the details of the study, because that's what we're concerned about.

We gave a detailed study plan that used a two-dimensional model to look the ramping effects, and you don't specify that in what you order the licensees to come up with. So just a little, I guess, about how kind of the detailed study plan will be developed and how we'll be consulted and who will make the ultimate decision about what gets in there.

MR. HOGAN: Okay. The Director uses, in consultation with the agencies and the study plan determination, it is required that the applicant engage the agencies in the consultation on what it is that they want in the study plan, what is it that they want. The applicant then has to propose a study. The agencies have 30 days to comment on it.

If the applicant adopts what the agencies want, great. If they don't adopt it, they have to provide a response and reasoning why they don't adopt it in the study plan. And I think we gave 90 days for the entire process --

MR. LYNCH: Mm-hmm.

MR. HOGAN: -- from the September 30th date which ones we have the dispute that's now being trumped

to the Director's determination on the dispute, so it would be 90 days from there.

So it's work with the agencies to come up with a study plan; if the applicant doesn't adopt a component, they have to justify why. Agencies have an opportunity to comment on what's not being adopted and what needs to be -- why that needs to done and FERC staff and/or the Director will make a final decision as to what needs to be done.

MR. THOMPSON: Just a point of clarification. You didn't mention FERC staff involvement in the process. You mentioned FERC staff involved in approval but not the process of working through it. Is there some reason for that?

MR. HOGAN: No. If you want FERC staff involved in the process, we'll be there.

MR. THOMPSON: I think that's important. I mean, I think --

MR. HOGAN: I have no problem with that.

MR. THOMPSON: I mean, I'm trying to be positive again about this dispute process. I think it's -- we see more movement on these issues when FERC has been involved to a greater degree. So if you could put yourselves in the loop there, not just at the end, that would be great.

MR. HOGAN: As long as everybody understands that while we're in the loop, you know, I can't speak for the Director in the loop.

MR. THOMPSON: I understand. Yeah.

MR. MITCHNICK: I mean, I appreciate your comments and, you know, we try to be as involved as we can, but generally we don't have the staffing to be involved in all these meetings. But certainly where it makes sense for us to be involved where you think we should be involved, you know, just let us know ahead of time. To the degree that we can build it into the study plan, I mean, we can look at that. I don't know if that's appropriate or not to do. But certainly we'd be willing to, you know, go as far as we could to help sort of reach agreement, you know, before it comes to us after a disagreement and then we sort of, you know, have to deal with it. So we're certainly willing to go that route.

MR. WOOSTER: I'd like to just clarify one thing that Ken said.

You said that we had asked for the detailed ramping site in Bullards and below New Colgate. We asked for below New Colgate and at Narrows 2. We did not ask for a detailed ramping site in Bullards. But yes, the instream flow is relatively constant in

Narrows 2.

MR. HASSELL: But is this the same reason that we --

MR. HOGAN: In Narrows 2 where it doesn't -- it's not a peaking operation, but -- and with the studies that we were also proposing, the ramping study's even better.

MR. BOWLER: All right. Element 5 of Request 2 related to floodplains.

NMFS requested a 2D hydraulic model of floodplain inundation tied to three hydrologic scenarios that we've discussed previously. The model would extend from the Narrows 2 tailwater to the confluence with the Feather River and would concentrate on ecologically important time periods.

YCWA stated that this request was covered by study 7.10, which involved 2D instream flow modeling below Englebright Dam.

FERC determined that study 7.10 as proposed provided sufficient information.

In its September 1st comments on -- going back to the September 1st comments on the revised study plan, NMFS had commented that YCWA mixed the term 2D habitat model with its intended 2D hydraulic model, so that may be something we can clarify, and that study 7.10

referred to instream flow analysis but not to floodplain analysis.

Any corrections to my characterization?

MR. WANTUCK: No.

MR. BOWLER: Is there any meaningful distinction between the habitat model and the hydraulic model or is that just --

MR. HOLLEY: Yeah, I can talk about that.

We don't consider what we requested, our floodplain study, to be a P-HAB-SIM type habitat model where we attach values about habitat suitability. It's just a hydraulic model which basically looks at abiotic factors, flood, you know, area inundated, depth of inundation, duration of inundation.

So we don't -- that's why we commented that we don't feel that it was appropriate to be included with an instream flow study because we're not attaching habitat values to powerhouses. It's a, like I said, abiotic analysis. So that would be the distinction between habitat model and the hydraulic model.

MR. BOWLER: Okay. So the hydraulic model, do the cross-sections go out into the floodplain?

MR. LYNCH: Actually, it's a 2D model, so it's more pixels, if you will, and it does go out into the floodplains.

Tom, maybe you could . . .

MR. JOHNSON: Yeah. It goes between the channel boundaries. I mean, "floodplain" is one of those broadly used, indefinite terms, but I think what that means is between the levees, essentially, between the, you know, the confined channel as it exists.

And yes, there's a -- there is a comprehensive map of the entire length of the river other than about a one-mile section.

MR. BOWLER: Does that cover the abiotic factors pretty well?

MR. HOLLEY: Yeah. But nowhere in any of these studies in 7.10 do they say that they're going to study the floodplain condition, so those aren't covered in any of the FERC study orders.

MR. BOWLER: So the hydraulic model is going to produce the frequencies and the depths and the velocities and the wetted perimeter?

MR. HOLLEY: The issue was that they're not planning, I don't believe, on modeling flows that are going to be high enough to inundate the floodplain. So they're just going to be looking at lower flows that are confined within bank flow channels.

MR. BOWLER: Isn't that like a 30-year record?

MR. HOLLEY: Mm-hmm.

MR. BOWLER: So there's no flows that high in the 30-year record?

MR. HOLLEY: Well, there are. I don't think those flows are planning on being modeled with this two-dimensional model. Correct me if I'm wrong.

MR. JOHNSON: Let me clarify. The River Management Team, of which NMFS is a member, has been working on a map and model of the Lower Yuba River for about three years. The map is essentially complete, still being, some pieces, QA-QC'ed. Modeling efforts at flows from 500 cfs up to 100,000 cfs are underway. NMFS should be aware of this. We get regular updates from the modeling folks. And combined with an IHA or any other kind of hydraulic -- hydrologic analysis where you have flood frequencies, you should easily be able to define, you know, where banking flows at 50,000 or 100,000 or 63,200 or whatever else you want, so all that information is currently being developed and is largely -- in fact, largely has been developed, as I said, in the RMT.

MR. BOWLER: Does the time frame match the study time frame?

MR. LYNCH: As a matter of fact, the hydraulic -- two-dimensional hydraulic model we anticipate using in the instream flow study will take

that 2D hydraulic model and apply it to HSCs for different life stages in fish. So yeah, it's in the same time frame.

MR. BOWLER: So is that --

MR. HOLLEY: We think that's great. And we're aware of all those flows that are being modeled, including the higher flows. The problem with the FERC study plan determination is that none of that language is included in the FERC study plan determination.

MR. BOWLER: You want it memorialized?

MR. HOLLEY: Yeah. Right. In the FERC record.

MR. HOGAN: Well, I think we -- we, in the determination, we limited it to -- first of all, I think we acknowledged that there was the additional flows, agreeing with the RMT, but we emphasized on looking at what was in the applicant's control, the 3400 cfs, so there is a little bit of a -- I understand.

MR. THOMPSON: The project could release flows higher than 3400; right? I went through the example.

MR. HOGAN: Highest flow.

MR. THOMPSON: And contribute to flows from the Middle and South Yuba, if it were timed correctly, to get even higher flows; right? You see the point?

MR. WANTUCK: Well, assuming flood flows are allowed to come down the --

MR. THOMPSON: But they do. As was pointed out, you know, the dams are commonly over the top there. The reservoirs aren't large. So it isn't just up to 3400 cfs. Correct, Tom?

MR. HOLLEY: Correct. I'd also just like to add that a project effect is the attenuation of those high flows. The flows that come into the project are -- some flood flows that come into the project are attenuated in the project dams and the flood flow that occurs in the floodplain in the Lower Yuba is less because of the project. So that's all -- that is the project effect that we're trying to look at and quantify with this study is that attenuation of the flood peaks and the result in loss of floodplain habitat.

MR. WANTUCK: I think it bears pointing out -- maybe we're all on the same page, maybe not -- but in recent years there's been a significant body of knowledge linking the importance of shallow water floodplain habitats to the life cycle of anadromous fish, especially in the early life stages. It's been identified that this is key and critical habitat when the floods happen. This is why we're focusing on this so much. It's not that, you know, we're just looking at this from an arbitrary standpoint. It plays a key roll in the life cycle of anadromous fish.

MR. CRAVEN: So basically the models are available, the data's available. Is the dispute then over how high or how far you're going to model? At what level?

MR. WOOSTER: No. The dispute's not that -- like you said, the model is built. Modeling runs I think are pretty much complete, including high flow runs. What's in dispute is there's no analysis of frequency and the magnitude and duration of that inundation that the model is able to predict.

MR. RABONE: What was the last study we just talked about? Flood frequency and IHA?

MR. WOOSTER: The flood frequency, this is two-dimensional floodplain inundation, specifically in the Lower Yuba River. So it's basically a data analysis on the output from existing models.

MR. WHITE: On the project effects on inundation.

MR. WOOSTER: Yes.

MR. WANTUCK: If I could, you know, this is an interesting area. Why are we asking for this? You know, why is this important? And I made the statement a moment ago that floodplains play an important role in anadromous fish life history. But beyond that, we're also sensitive to the idea that this is a leveed system

and the levees are there to protect human values. We're looking for this model to help give us insight about where that sweet spot is in perhaps the unleveed areas of the watershed that could be made available to some amount of flood flow without overtopping levees and flooding Marysville and Yuba City, for instance.

There's got to be some value there that maybe the RMT already knows it. We're hoping that through this process they can be enlightened by that and operate the project in a way that's good for both fish and people. I see it as an important study, really.

MR. BOWLER: YCWA has flood requirements, flood-abatement requirements from the Corps, as I understand. Right?

MR. AIKENS: That's correct. We're a Corps Section 7 reservoir and we have operational requirements during flood events under that agreement.

MR. BOWLER: And to what degree does that bound the range of operational scenarios?

MR. AIKENS: Those are pretty large events. Well, I guess there's a couple of issues. There's, you know, maintaining a dedicated flood pool, and so when we reach that point we are required to release water to maintain that flood pool. And then there's additional operational requirements for safety of the dam and the

project and certain high ramping rates.

And if you want more detail, you know, I'd probably need to look at it a little bit more to give it to you. But the common area would be bumping into the bottom of the flood pool and releasing water to maintain that space.

MR. BOWLER: Tom?

MR. JOHNSON: Yeah, I was going to just make a comment about the existing flow schedules that are in place in the Lower Yuba River were collaboratively developed using a -- looking at all the life cycles of all of the different species of concern, you know, number of anadromous salmonids. And the flows in the Yuba are, in most year types, limited, as is true of most of California, and so the available water was parsed out to best benefit each of the species and life stages in a way that all of the resource agencies and NGOs that agreed to this thought was appropriate, and then that was evaluated in a NEPA document, subsequent number of analyses, and the RMT continues to study to ensure -- or to investigate whether that balance of flows is appropriate.

One of the things that was considered was things like juvenile rearing and, you know, higher spring flows versus the benefit of summer flows or

higher fall flows.

But the reality is, is that to increase flows in any one time of the year will result in a decrease of flows in the other times of the year, so just a caution that picking a single species and life stage and spending a lot of time to analyze that does not get to what I think we're all searching for is the most -- best balanced use of the resource to benefit as many species, as many life stages as possible.

That's what we went through from 2000 through 2006 when all of us developed the accord flow schedules, and that is what is in place today. So that's just a note to the technical panel and others assembled here.

These aren't flow schedules from 40 or 50 years ago. These are flow schedules from five years ago that were developed with the input of all of the resource agencies, including NMFS, Fish & Wildlife, Fish & Game, and YCWA.

MR. BOWLER: Is there any proposed change to the flow schedules as part of the relicensing proposal?

MR. LYNCH: That is to be decided through FERC.

MR. HOGAN: Not in the PAD.

MR. BOWLER: Not in the PAD.

MR. THOMPSON: I just wanted to reiterate something I think I mentioned earlier, but this

floodplain issue that we're talking about is also a priority of the Anadromous Fish Restoration Program Fish & Wildlife Services is administering, and they have also requested these kinds of studies of floodplain inundation and juvenile rearing, et cetera, in the Lower Yuba.

MR. WHITE: Jim?

MR. LYNCH: We've kind of gone back and forth, I think, in that while we're not assigning any habitat value to the floodplain and we've talked now about, you know, the value there, which brings us back to the instream flow study, which has HSC specifically for juvenile rearing, adult, all that, which would be kicked out through that.

I think if we knew if there were certain flows that you wanted a map of or know how much was flooded, what's the wetted perimeter, that's an easy thing for us to do. I mean, as I said, we have the model, we have the data, and I think Greg could kick that out pretty quick. It's just understanding are we running everything from 100,000 to zero in one-cfs increments or is it 100, 80, 60, 40, and give us wetted perimeter. If it's floodplain, we need to know what a floodplain, how to define it, because it's not obvious.

So if we could get some more clarity and --

because we do have the tools and we can probably generate it relatively easily.

MR. WANTUCK: Just as a starting point, Jim, I'm curious what the flood capacity is in the recent levee improvements to Yuba City/Marysville. That's got to be a rated --

MR. LYNCH: I wouldn't want to start there.

MR. AIKENS: The simple answer is, it has not changed.

MR. WANTUCK: Really?

MR. AIKENS: No. The official channel capacity by the Corps of Engineers is the same. And what this is doing is bringing the levees up to meet those standards, because the standards have changed due to the failure mode being under seepage and other things that weren't known until the later flood events that we've had, like 1997.

MR. WANTUCK: And do you have a flood frequency in mind in terms of what the levees can protect against?

MR. AIKENS: No. It's a complicated thing, but the Corps manual says the Yuba River channel capacity is between 120 and 180 thousand cfs, depending upon the flow of the Feather, and then the Feather below Yuba City is 300,000 cfs.

MR. WANTUCK: What I'm thinking is that would

be the upper bound. We don't want to go past that. Probably wouldn't want to approach that.

MR. AIKENS: You don't want to go anywhere near that. You're getting something very near and dear to my heart, public safety.

MR. WANTUCK: Well, yeah. I mean, there's got to be some upper bound that approaches the level that you want to protect for public safety versus what's, you know, instream flow typically.

MR. HOGAN: What kind of increments would you want to look at coming down from one of the upper limits?

MR. WANTUCK: I don't know the answer to that. I think we need to have a followup on this. That would be the methodology I'd look at is, you know, what's the upper bound of public safety, with margins or whatever you've got to have, and does that allow for some greater floodplain inundation in different parts of the watershed.

MR. LILLY: You know, I'll just say we've got to have a reality check here somewhere. I mean, these flows are so much, so much, so much more than anything that could be -- have any nexus between project operations and project effects. I mean, those flows happen when they happen. If there's 120,000 cfs flowing

down there, we are not talking about the range of project effects here. We need a reality check here.

MR. WANTUCK: If you're filling your reservoir, Alan, when it should be flooding, that's a project effect of the habitat.

MR. LILLY: Yeah. And those are completely controlled by the Corps of Engineers at that point.

MR. WANTUCK: We don't know that for a fact. That's what we're asking for, that information.

MR. HOGAN: I think we would be willing to visit this conversation with NMFS and YCWA, knowing what the Corps restrictions are, and take another look at downstream of Englebright flows, so we'll let you know.

MR. BOWLER: We'll leave it at that.

Element 6, Request 2, Gradients and Barriers.

NMFS requested ground crews to survey the areas on the North Yuba River from New Bullards Dam to the confluence with the Middle Yuba and down to the normal pool elevation of Englebright Dam. The crews would find, measure and take GPS measurements of natural blockages. The data would be combined with that of other hydrology and hydraulic studies to assess the potential effects on anadromous fish movement.

YCWA declined the proposal based on lack of nexus to anadromous fish presence.

FERC included this item in its discussion at the beginning of the response to NMFS's study request in terms of the nexus issue.

And again going back to the September 1 revised study plan comments from NMFS, they argue for the study's inclusion partly based on the effects on essential fish habitat.

Any comments on the summary?

MR. LYNCH: I would just add I think we also said that the information existed. There have been at least between Our House and the Middle Yuba River and there have been assessments of fish passage at low flow and high flow barriers, even for anadromous fish.

MR. CRAVEN: Who has the reports, the data?

MR. LYNCH: They're in the PAD. And they were done by Vogel and Gass, I believe. Two different studies.

MR. BOWLER: And that was Our House to . . .

MR. LYNCH: It was Our House down to Englebright.

And also we had done habitat mapping that we included in the PAD and attached to the instream flow upstream study where we looked at gradient, barriers, that sort of information, included that in the updated -- the initial study report and -- excuse me --

in the proposed study plan and the revised study plan.

MR. WHITE: What was the focus of the -- what was the reason for the gradients and barriers above Englebright and upper reach?

MR. LYNCH: It was part of the Upper Yuba River studies program, I believe.

MR. WHITE: Okay.

MR. CRAVEN: Is that still in dispute or . . .

MR. HOLLEY: We didn't see anything in the FERC study plan determination in response to this element, so yeah, we would like an explanation as to why it wasn't included.

MR. BOWLER: How far is the existing information from the information that you're requesting?

MR. HOLLEY: It doesn't cover from Englebright upstream to New Bullards Bar Dam, so we'd be looking for the information in there, particularly low barriers.

MR. LYNCH: It covers from Englebright up to the confluence with the North Yuba River.

MR. HOLLEY: North Yuba River study program?

MR. LYNCH: It went from Englebright to Our House and the Middle Yuba, so it didn't go up to North Yuba, I don't believe, Tom, but it went from Englebright up to the --

MR. HOLLEY: I understood it just went from the

confluence of the Middle Yuba upstream.

MR. LYNCH: I think it went all the way up.

MR. WANTUCK: If I could just point out, if I'm following this about the existing natural barriers, I just sat through several workshops of the Yuba Salmon Forum where the technical work group has systematically mapped all of this, and all we would be asking for is simply put that on the FERC record so that it's a matter of the proceeding.

MR. LYNCH: Actually, I think that's -- once that data's reported out, we don't have a problem with that. And I think it's a good compromise on it, Rick.

MR. HOGAN: So resolved?

MR. THOMPSON: Well, I think we also need to get clarification. I'm like Tom, I'm thinking of the Gass study as being one that evaluated natural gradients from the confluence of the Middle Yuba up to about 35 miles, and the same in the South Yuba, but I -- my memory, I do not recall seeing an evaluation from Englebright Reservoir up to Bullards Dam, and I think that is what we're -- is that correct, Tom? We're correct? We're asking for an evaluation of that.

MR. WANTUCK: And I'm saying I believe this work group, the Yuba Salmon Forum work group, I've seen it, has been through that at least from an air -- I

think did it in aerial photography, if I remember correctly, and this could be put on the record, and it's available.

MR. LYNCH: If I misspoke, the -- Rick's solution is a compromise to that and covers it, I believe, although I'll say that, you know, at least from our standpoint what we're looking at is from Englebright up to the project facility and that those analyses go much further upstream, that the Yuba Salmon Forum . . .

MR. WANTUCK: Right. So the information is there, and I believe the work group's going to report out on it soon. Oh, it's already been reported? Okay. Then you can download it and put it on the record, I guess.

MR. LYNCH: I don't have any objection to that.

MR. BOWLER: Again, any other questions?

MR. WHITE: I hesitate to ask, but the dispute doesn't address habitat below Englebright. Is the barrier information going to be captured and all the other disputes that we're talking about, the studies that are already being proposed?

MR. HOGAN: Downstream of Englebright?

MR. WHITE: Correct.

MR. HOGAN: I think with the detailed mapping that's being done, the three-dimensional map, that

should all be captured.

MR. WHITE: Okay.

MR. WANTUCK: We're satisfied that that's covered.

MR. BOWLER: Okay. On that happy note, I propose that we take our break ten minutes early before we start into Study Request 3. I think that wrapped up Study Request 2. So back at 20 past.

(Recess taken, 3:11 to 3:28 p.m.)

MR. BOWLER: Let's get started on the home stretch, please.

Moving into Study Request 3 and Element 1. I understand Element 2 is a nonissue, it's resolved, so we're doing 1 and 3, is there temperature monitoring and then modeling.

Starting with monitoring, NMFS requested very specific temperature logger spacing, timing, and download frequencies developed collaboratively and carried out by the applicant and requested three stations. One of the particular issues is NMFS requested three stations in New Bullards Reservoir.

YCWA proposed only one station in New Bullards, two in Englebright, and 38 in various stream locations. YCWA stated that all of the stations proposed by NMFS were in YCWA's plan.

In FERC's determination FERC stated that NMFS gave no reason for the necessity of three temperature loggers in New Bullards, while YCWA explained that the reservoir was very deep and thermally stable, and FERC determined that additional temperature loggers were not needed.

NMFS didn't respond to the determination in the October 20th filing, nor was there information in the revised study plan comments of September 1.

Any corrections to that? That's a pretty sparse summary of that one, but hopefully accurate.

MR. HOLLEY: Our main point of contention is the Corps, the reservoir profile additions were satisfied with the stream monitoring plan. We just would like to see the reservoirs sampled in a longitudinal direction. Right now we just have one thermal profile at dam face, so the intake, and this kind of gets back to our Request 1 in that we would like to see, if fish eventually need to navigate the reservoir, they're going to navigate it longitudinally so they're going to come in contact with temperatures not only at the dam face but all the way up to the head of the reservoir, so in order to accurately characterize the thermal regime of the reservoirs, both New Bullards, I should say, and Englebright, we requested additional

temperature profiles in those two reservoirs farther upstream than the dam face.

MR. HASSELL: I'll speak for FERC staff. We just based this decision basically on best professional judgment based on the bathymetry of the two reservoirs. We thought that, you know, Englebright, being long, narrow, and filled with silt, sort of shallow, you know, and we'd get a cold water stream coming into a reservoir, solar energy going on and everything, there may be, you know, differences between the upstream end of Englebright Reservoir and the downstream end with Bullards Bar Reservoir, you know, very deep, and, you know, I think holds about a million acre-feet of water with a surface area of 4500 acres, an average depth of 200 feet.

Not all the water in the project goes through there, quite a bit of it, because it's got the diversions from the other creek, a really long residence time, an absence -- I must have missed it. I didn't see any information to suggest that, you know, it would be irregularly stratified in a longitudinal direction.

And in the filing that was made today it says there isn't enough current information to order Englebright Reservoir to be modeled in two dimensions. But I just must have missed that.

MR. HOLLEY: That's going on to our Element No. 3, the modeling element. They're essentially the same issue. If you're going to model something in two dimensions, you need to have temperatures in two dimensions.

Just conceptually, you know, if you just have one temperature profile at the face of the dam, you don't know how far back the cold water pool extends. You don't know the temperatures, what the temperatures are going to be like in that profile as the reservoir -- as you get further and further out towards the head of the reservoir, so we wanted that temperature information because, like I said earlier, fish are going to be navigating potentially through those.

MR. HASSELL: Well, it would be modeled -- it would be modeled, but, you know, it would be horizontally stratified, you know, similarly to where it was. I'm not exactly sure if it were not, what would that -- how would that affect it. I mean, it's essentially going to come -- it's going to be stratified, okay, at a certain point. At certain moments it's going to be stratified.

And if the fish likes cold water and wants to go in a certain direction in that time of year, he's going to follow that until it runs out of it, gets into

the shallower water where it's going to warm up and then it's going to be a cold water source. I'm not exactly sure why the exact location of that would be critical, the exact elevation at that further-up station.

MR. HOLLEY: When we're talking about outmigrating fish perhaps potentially migrating through the reservoir, the contrasting or the differing temperatures create different flow -- create different velocities and create different currents within the reservoir, and that can affect outmigration, so we were looking to characterize --

MR. HASSELL: No, I'm not following that.

MR. HOLLEY: Temperature differences, if you have, you know, a warm tributary like the South Yuba coming in and you have a cold release like you have at Colgate, one can travel on top of the other and they can create different velocities -- I mean, not velocities but just currents from the rising and the mixing of the different temperature water. That's what happened in Pelton Round Butte and why they couldn't successfully get smolt outmigrating out of the system, because the two branches -- or there are actually three branches to through that reservoir -- all came in at different temperatures and that created a swirling current that the fish couldn't navigate through. And that was why

they could not get outmigrants out of the system.

MR. BOWLER: Is there a need for the data other than anadromous fish movement?

MR. HOLLEY: That's what it would be most useful to us for.

MR. HASSELL: So it's for outmigrating, to make sure the current doesn't dive down and carry the fish away from the . . .

MR. WANTUCK: Well, let me see if I can help on this one. Tom mentioned a project in Oregon. Maybe you're familiar with Deschutes Basin, Lake Billy Chinook, a very expensive --

MR. HASSELL: I'm think I'm familiar with this project. I mean, I've heard -- I haven't worked on it, but I've seen presentations on it.

MR. WANTUCK: Right. Well, tens of millions of dollars investment in trying to get a system that will successfully collect smolts that are born further up in the watershed and actually are able to migrate through the reservoir to the face of the dam, at which point a screen -- a selective withdrawal system was built to screen these fish off.

And it turned out that for steelhead, they had troubles, although they were having successes for other species at different times of the year.

And as Tom pointed out, the thermal mixing in the reservoir was sending a confusing signal, and the steelhead didn't react the way they thought. They didn't get collected.

So they spent a lot of more time doing computational fluid dynamics and understanding the reservoir currents better, and they came up with a fix that I'm told is quite successful.

So how does that translate here? Well, we have a forum that's called the North Yuba Reintroduction Initiative that is supposedly looking at the possibility of reintroducing fish up in that upper part of the watershed.

But the missing link right now is how do you get the smolts back out to the ocean so they can mature and come back. And if we're going to build a smolt collector somewhere, it's either going to be at the base of the dam, somewhere in the reservoir, at the head of the reservoir, or up in the tributary. This all yet has to be worked out.

And we think that the hydraulics and the temperature profiles of the reservoir deserve a fairly detailed treatment so we can try to understand what will fish do, especially outmigrants, smolts, if they're trying to migrate downstream.

This is a one million acre-foot reservoir, give or take a little, and it's not an insignificant issue.

MR. HASSELL: Let me go back to the nexus. There's always that nexus question, which we beat to death.

MR. BOWLER: I wanted to ask YCWA two questions. One is, given your description in several of these studies, the nexus issue, what are the purposes of the data, in your eyes, in proposing to do the temperature logging? What do you intend to -- what do you see that data being applied to as a resource issue? That's my first question. I'll hold my second one.

MR. LYNCH: Sure. Upstream it was for water temperature primarily in the streams, the reservoirs, there's existing information on what each reservoir looks like for reservoir fish, and then for the streams downstream, and then primarily as input into water temperature downstream of Englebright where water temperature criteria -- water temperature conditions are much more sensitive, if you will, for anadromous fish. So it's to develop a robust water temperature model primarily for the streams.

And we drove the water -- the reservoirs by what we thought we needed for an adequate model out of the reservoirs to -- for input into the stream

temperature sections.

MR. BOWLER: The downstream effect.

MR. LYNCH: Yes.

MR. BOWLER: And then my second question is, I can't remember specifically, you described -- I know there was some description in your plan of how you came to the conclusion that New Bullards was fairly -- was a stable system. Was that more than just that it's big and deep?

MR. LYNCH: It was more than that. We have I forget how many years of profiles, every -- roughly every other month, something like that.

MR. AIKENS: Every two weeks.

MR. LYNCH: Every two weeks. We have quite a bit of profile data already, which led us to believe that it's pretty deep.

Also, the stratification is pretty reliable. But also, the intake is very deep.

So if you're figuring out what's going to come into the stream from the reservoir, knowing you have a very deep intake, there's not too much that's going to change the temperature coming out.

MR. CRAVEN: Regarding your profiles, are they longitudinal profiles?

MR. LYNCH: No.

MR. CRAVEN: Vertical?

MR. LYNCH: Near the intake.

MR. CRAVEN: Just at the intake. Do you have any information at all away from the intake, farther up?

MR. LYNCH: I don't believe we do.

And, again, the primary reason, we're interested in what's going through the intake, and then we also have a gauge on the output.

MR. CRAVEN: Okay.

MR. LYNCH: So we're driving it by modeling of water temperatures in streams.

MR. BOWLER: I'd like to bring in the modeling, so we might as well tie these two together. There's the 2D water quality model at Englebright and New Bullards impoundment, impoundments developed for the three scenarios we've discussed before, or at least the unimpaired, yeah, the three scenarios and the climate change scenarios using a 1970 to 2012 year flow record.

YCWA explained that the reservoir was deep and stable and did not require 2D modeling and that there was no argument to -- or no argument otherwise from NMFS.

FERC agreed that 2D modeling was not essential in New Bullards. FERC argued that climate models are not available with the necessary accuracy. And the

reopener would be the appropriate way to deal with climate change and the need for related additional studies. FERC determined that temperature modeling for climate change was not needed.

NMFS in the revised study plan comments stated that the temperature study was vague, particularly on whether it would use a 2D approach. And that's it.

So anything I'm missing on the modeling? Or mischaracterizing?

MR. LYNCH: Only that the YCWA study plan basically said we collaboratively developed the model platform with relicensing participants.

MR. BOWLER: Is there any -- are the issues basically the same on this as the monitoring?

MR. HOLLEY: Yeah. I was just going to say that the issues are the exact same. We want to know in a longitudinal direction what the temperature's like in the reservoirs for fish migrating through them.

And generally with physically based reservoir models you get velocities, you have to simulate velocities as well, so you have a secondary benefit. You model a physically based reservoir, temperature model would model velocities and currents, which would be important to outmigrating fish as well.

So essentially the same reasons that we wanted

the additional monitoring station to be used for this two-dimensional modeling platform.

MR. WANTUCK: Just to add one more thing to this, you know, we had to account for possible dynamics having to do with predator-prey interactions in reservoirs, so if we're looking at migratory fish moving through a reservoir and, you know, if we aren't able to understand the temperature profiles, some of these fish are planted exotic species that are oriented toward warmer waters, and we'd like to know, you know, what that spatial and temporal profile looks like so that we can get an idea of, you know, are we dealing with a major problem here in terms of outmigration of fish just from a predation standpoint. Temperature profiles give us that kind of insight.

Obviously, we know that anadromous fish are oriented toward more the cold water, but if the reservoir turns over and you have significant warming, we don't know that, we're hearing that it's not an issue, but we'd like to verify that, so we could rule that out and any potential future schemes that involve outmigration of smolts.

MR. BOWLER: I think we're ready to move on.

MR. HOGAN: Well, I was just going to pose a question, you know, kind of a position. And, you know,

absent a plan for outmigrating smolts -- and, as you recognize, Rick, collection facilities at New Bullards Bar can be at the dam, middle of the reservoir, somewhere in the upper reservoir -- we don't know at this time what potential changes in project operations may come about in the licensing, minimum flow requirements, ramping rates, things of that nature.

And I'm wondering, given the lack of that understanding, what the project operations will look like post-licensing, the uncertainty of what outmigration trapping facilities or passage facilities may look like, how would this study information collected today, under current conditions, be useful? I mean, if we change the project operations and the licensing, doesn't that negate the value of the studies that you're asking for today?

MR. WOOSTER: Not if you develop a full 2D hydrodynamic reservoir model. Then you've got the tool to start evaluating the different changes that might come along with the license conditions.

MR. HOGAN: And what's the difference with doing that at a future date when we have some more specifics on fish passage and the need for downstream migration facilities or doing it now?

MR. WOOSTER: Maybe a proposal to develop a

tool that will be able to do that.

MR. HOGAN: I think we have said through a reopener process, if the time came, yeah.

MR. WOOSTER: Then you can make a second tool, second reservoir temperature model.

MR. WANTUCK: I think the difference is, Ken, we are anticipating and envisioning recovery actions through our Central Valley Recovery Plan. We think that's reasonably foreseeable, as we said this morning.

You know, is there a trigger that we can say I think that's a difference of opinion that we have right now. You're looking for a hard trigger. We're pointing to all of these things that are developing that we think mean that someplace in this watershed passage is going to be foreseeable.

I can only comment that -- and I don't want to implicate the whole ILP process here, but we are forced to make our important decisions before you get into your NEPA analysis, and that's why we're having this trouble. We see our decision point at an earlier time than perhaps you do. And I'm wondering if it wouldn't be more appropriate to move, you know, the Section 18 prescriptive process to some later point to coincide with the analysis that you're expecting to come in when you do your NEPA analysis.

MR. HOGAN: You have that opportunity with the reservation of authority.

MR. WANTUCK: Well, you know, I suppose. Yeah. That's a good point. We never envisioned that it should or could work that way for that reason, but yeah, I guess you're right about that.

MR. SHUTES: Could I offer a technical point as someone who's been involved in the discussions of modeling New Bullards Bar?

MR. BOWLER: Yes.

MR. SHUTES: My name is Chris Shutes. I'm with the California Sport Fishing Protection Alliance, and I've been working on the small technical subgroup that's been involved in trying to figure out how we're going to model New Bullards Bar.

One of the issues that arose in that was a question of what the future operation of New Bullards might be in consideration of possible greater spring releases for delta outflow requirements in, first, to the State Board requirements that may be coming sometime in the relatively near future. And it was acknowledged that if the reservoir were drawn down more frequently, the sort of normal stratification that we've seen in the past might change somewhat.

Our biggest technical problem in addressing

that was that absent requirements it would be very hard to establish monitoring -- sufficient monitoring locations that would allow us to start constructing a 2D model because the reservoir frequently or in general is pretty high.

And so we're looking at a possible future condition where, for downstream purposes, not simply for upstream passage of anadromous fish, there may be a need or an interest in trying to better characterize the changes at lower elevations, reservoir elevations.

But our problem was trying to figure out how you would do the monitoring in order to inform a model short of actually drawing down the reservoir for that specific purpose.

MR. BOWLER: Is that why you mentioned the reasonably foreseeable delta flow requirement?

MR. WANTUCK: I don't recall that being part of our dispute, but I think the point is well taken.

MR. BOWLER: Thank you.

We need to move on to get to our goal, and so I'm going to 4 and 5, which I understand are resolved.

MR. WOOSTER: I had a couple quick --

MR. BOWLER: I'd like to hold that until the end so we can get through the ones that aren't resolved and then we'll come back to this in our extra space.

MR. WOOSTER: Okay.

MR. BOWLER: Moving on to 6, Study Request 6 is, I believe, seven elements, as I understand it. So this is marine-derived nutrients, and so you treat them all together.

NMFS requested that YCWA provide information through desktop analysis on the effects of project-related activities on the loss of marine-derived nutrients in the Yuba River. NMFS sought to have the information generated in response to seven request elements:

Element 1, estimate a range of the historic mass of marine-derived nitrogen transported annually by Chinook salmon;

Element 2, estimate the historic mass of marine-derived nitrogen transported annually by spring-run salmon;

Element 3, estimate a range of the current annual mass of marine-derived nitrogen transported annually by Chinook salmon;

Element 4, estimate the current annual mass of marine-derived nitrogen transported by phenotypic spring-run;

Element 5, estimate annual loss from historic current levels of marine-derived nitrogen to the Yuba

River;.

Element 6, estimate the annual loss from historic to current levels in the Upper Yuba River;

And Element 7, compare the difference of marine-derived nitrogen incorporated into periphyton and aquatic benthic macroinvertebrates collected in the Upper and Lower Yuba River.

YCWA declined to adopt this study based on the nexus issue.

FERC made the same argument in its determination, and there's been no response to the determination from NMFS.

I hope it's accurate, since that one I pretty much read.

MR. THOMPSON: I think we may have made some response, but it wasn't very specific, Stephen, so that's okay with us. I think . . .

MR. BOWLER: Go ahead.

MR. THOMPSON: Okay. Yeah. I think the -- looking at the study plan determination, I see that the staff analysis says that this is tied to the fish-passage issue, so they dismissed all of the study of the loss of marine-derived nutrients to the Upper Yuba River on the basis that the project doesn't affect fish passage. And, of course, we disagree with that.

We think we heard FERC earlier today say that the Narrows 2 plant needed no further evaluation, but it was a barrier to upstream fish passage.

And I believe in the study plan determination they cited criteria in 5.9(b)(4), which is that's there's enough existing information to determine that that power plant cannot be navigated in the upstream direction for fish. That's what I heard earlier today.

I think that means that it blocks fish passage. So we'll disagree with you on that point. We think that there is an effect of the project, upstream fish passage, and therefore, we believe they should have analyzed the loss of marine-derived nutrients to the Upper Yuba River.

With regard to the Lower Yuba River, we believe that there could be some cumulative impact effect of the project that should be evaluated.

FERC disagrees with us, stating that the loss/reduction of marine-derived nutrients to the Yuba River system -- this is on page 57 of the study plan determination -- would likely be the result of the construction of Englebright Dam as well as many other land management practices that generated a reduction in the number of returning sea-run salmonids, not the Yuba River Project.

So it appears that OEP staff asserts that there is no cumulative effect of the project, but I don't see any rationale for it here, which is why we're remaining -- we keep our dispute for all seven.

And I think I should just make a statement about what the benefits of this are. I think if they weren't of marine-derived nutrients, if it wasn't obvious from our request, that the upstream migration of anadromous salmonids, followed by their death, is very important in maintaining the fertilization, the nutrient status of a stream.

And it's kind of common sense. There are a lot of fish that -- anadromous fish that exit a system, but they're about as long as your hand, and the ones that come back are about as long as I can stretch my arms apart. And the difference is then that a lot of nutrients come back, are brought back from the ocean.

Streams flow downhill. There's a constant export of those nutrients. And without the import, there's a long-term decline in and loss and reduction in nutrients.

And so we place this study request forward to analyze the loss due to the project, cumulative loss in the Lower Yuba, the loss due to the cumulative effect of blocked fish passage to the Upper Yuba.

MR. HOGAN: As you stated, Stephen, I mean, we drew the nexus argument to the project's effects.

Larry, if I said earlier that Narrows 2 was a barrier to fish passage, I'm going to take that back. I don't see it a conducive route to upstream fish migration. Okay?

But that said, Englebright Dam pre-existed the hydroelectric power project by twenty-some-odd years, 24, 25 years, I think. That ended the upstream run of salmon into the upper watershed, not to mention previous mining activities that would have occurred up there that would have had negative effects, both of which are not project-related.

Again, criteria 5 says we specifically looked at the effects of the project, nexus of the project to project effects.

So if Englebright was the project facility and was part of the construction of the project, we'd be looking at this differently, but because Englebright, you know, pre-existed, the run was extirpated from the upper watershed well before the construction of the hydroelectric project, we just don't see a connection here.

MR. WANTUCK: What do you consider to be the baseline of this project? Do you consider it to be

before the project was built and only Englebright Dam, was that the pre-project baseline?

MR. HOGAN: The current baseline --

MR. WANTUCK: With the project in place.

MR. HOGAN: Right now.

MR. WANTUCK: Yeah. Yeah. So in this case, you know, you're going back 20 years. And we're stressing that you're -- by your own definition you considered the project effects and the baseline of the project, the current configuration of the project and its facilities. In other words, you don't go back 20 years to say what happened then; you say what is the project configuration now, that's our baseline.

MR. BOWLER: I wanted to, in the interest of time, leave these thoughts to your closing statements and I'd like to get through the last few studies so we can get our job done. Thank you.

MR. WHITE: Just before we move on, is there any element of this marine-derived nutrients study request or project effects below Englebright that could be teased out?

I wonder personally, given the large uncertainty in what we know about the historical salmon numbers, there are big question marks about how many fish actually came back. Could any of that

information -- is that of interest to NMFS or -- and/or is it possible to obtain that kind of information?

MR. THOMPSON: Well, I think I would just answer that as probably one of the key references that I used in developing this request was a study done in California authored by Joe Merz and Peter Moyle, 2006, which was performed in Mokelumne River, I can't remember, it was a couple of rivers, similar to Yuba. We're talking about impoundments, mining effects, diversions. They were able to do it in that watershed.

They determined -- they were able to estimate the loss of marine-derived nutrients to those rivers. They were also able to -- you know, these are isotope studies. They were able to see the transfer of marine-derived nutrients into wine, grapes, and into animals that feed on the carcasses and transport the materials far away from the watershed.

So they were able to do it, and I don't see the great difference between rivers like Mokelumne. I'm struggling to remember the other river. But they did some comparisons of rivers, and I think it could be done to maybe tease out what the long-term loss would be due to these reductions.

MR. WANTUCK: Can you restate what you just said?

MR. WHITE: I was specifically asking about what project, other than blocked passage, say, operation of the project, would it be possible to determine what reductions in salmon might be by factors other than blocked passage that the project is involved with, that is, operations of Narrows 2, temperature releases, red scouring. There are some project effects other than blocked passage.

It seems to me it would be hard to tease a population level effect of those project effects in this -- tease that out in this kind of analysis based on -- because there are so many uncertainties in the numbers if it were starting with this baseline.

MR. THOMPSON: Yeah. We acknowledge that. Yeah. And you're right. There are other project effects. Bullards Dam isn't that old. It's obviously alternate thermal regime quite a bit in the Yuba and the hydrological regime, and -- but there are certainly other effects. But there are other dams, there are other mining impacts you have to acknowledge.

MR. WHITE: Even if it's hard to get that information, it would still be interesting to NMFS.

MR. THOMPSON: I think so. I think it would.

MR. WANTUCK: Well, it builds the case of why -- it's another element of why a reintroduction of

this sort, and we described earlier, would have positive effects not only for just one species and its population but the entire ecosystem benefits in the areas of reintroduction. Just ask any brown bear, you know, that's got a nice salmon in its mouth up in the upper mountains, or some eagle that's just caught one. And it even -- you know, it goes down into the molecular level. It has an effect throughout the entire ecosystem from top to bottom. So we'd point that out.

One reason why this is important is when you look back at our operable definition of what is a fishway, the key words are we want safe and effective passage.

This speaks to the effectiveness of it. You don't want to build a bridge to nowhere. You don't want to put salmon where they can't thrive. You want to know what's going to happen if you take this important step.

It's not inconsequential. It costs money. So we want to know all the benefits that can be derived from this in order to make a good public decision.

MR. THOMPSON: Just to add one more thing real quick, in other streams in the Northwest where anadromous fish have been reintroduced, fertilizations have taken place and been found to be necessary for good production of juveniles.

MR. BOWLER: Okay. We've got 25 minutes left. We've got Study Request 8. John wanted to bring up a couple things about 4 and 5, and I'd like to get those done as quickly as possible so that we might have a few minutes for comments from some of the other observers, so I ask that people be very concise in this discussion. I know the synthesis issue is important, but I want to cover it quickly.

Basically, this is a study request to have information generated from the seven other study requests and compile and synthesize them into a single cohesive analysis of project effects on anadromous fish, and then there's 11 elements and subelements listed, and basically YCWA and FERC said this wasn't right for the study phase, it was more appropriate for the preliminary license proposal or draft license application.

Any corrections to that very terse summary?

MR. HOGAN: Maybe I could provide you with an update of where we -- we've had some discussions with National Marine Fisheries staff and YCWA on what we think is a, from our perspective, a reasonable approach to address this issue, and that is to work with NMFS and YCWA, FERC staff together on the preparation of an applicant-prepared draft eligible assessment and an applicant-prepared draft EFH assessment that would

incorporate the type of analysis that National Marine Fisheries Service is looking at here or requesting here, and we would work closely with them to craft what the BA and the FH assessment does.

We plan to meet in, I think, February to try and lay out a schedule to get that earlier than the -- to lay out a schedule that will allow us to work on it before the draft and finalized applications are due, and then when the final comes in, it'll be -- should be looking and incorporating the analysis the way NMFS would like to see it.

Now, that said, the information in that analysis, our caveat would be that it contains the information required by the study plan determination and the Director's resolution on the dispute and other existing relevant and pertinent information that would apply to a BA and EFH assessment, so we've kind of aligned the process.

We still have work on setting up our milestones and things of that nature, but the goal here is to give National Marine Fisheries Service the type of analysis that they're asking for.

MR. THOMPSON: So the difference between the ILP regs which requires a draft biological assessment at the license application stage, you're saying you would

require it at the preliminary licensing proposal stage?

MR. HOGAN: I think we're trying to get it as early as makes sense.

MR. MITCHNICK: I think YCWA has already committed to preparing the draft biological assessment as part of the draft license application.

MR. LYNCH: Yes. Given the information -- assuming all the information's available.

MR. HOGAN: And at that stage I think we already have quite a bit of input into it.

MR. LYNCH: Mm-hmm.

MR. THOMPSON: That was one question. The other question is, how would that cover non-ESA-listed anadromous fish? Because we have fall-run Chinook, Pacific clam prey, there are lesser species here, but they are present. But fall Chinook are a big deal, and we have jurisdiction over not just ESA-listed anadromous fishes but also the non-ESA-listed -- or would you include the fall-run Chinook analysis?

MR. HOGAN: We have one of our topics to sit down with NMFS on is the table of contents of that biological assessment. I don't know that YCWA will want to include fall-run specifically in the biological assessment. I don't know whether it's exactly appropriate. I would say that I would be comfortable

seeing a counter-analysis for fall-run Chinook in the ELP.

MR. THOMPSON: I think the last thing I had on this was that if we see the analysis at that point, the applicant will be essentially holding the analysis, whereas, other licensing participants won't be seeing this as study reports come out.

In other words -- I think you get the picture -- study reports will be issued for review and comment and for us to digest it to determine if second-year studies might be warranted, et cetera.

If this analysis is held until later, then that's not in the study reports because it's not ordered in the study plan. We're essentially deferring it to later. And that is a bit of a concern.

MR. HOGAN: Okay. One of the approaches that we were taking with this was that we felt that the study reports needed to be deemed somewhat final so that we knew that that information was QA-QC'ed and the agency comments had been addressed in those study reports before taking that information the next step and doing the synthesis analysis.

I think we're willing to kind of work on a schedule with NMFS and YCWA to do what makes sense and is appropriate, but I want to be careful of not using --

or abusing information that's not fully vetted and ripe.

MR. THOMPSON: I'll just close briefly and just say I think the real bottom line is we need to get a good effects assessment. And if we get it, I think we'll be happy. That's really what it comes down to.

And in other projects in California the NEPA documents aren't producing often good effects assessments. And it's not just our opinion. There are agencies that rate them. And a low percentage of FERC hydro projects in California have been considered to be complete by agencies such as EPA with regard to effects assessments, and their environmental objections are normally related to insufficient information.

And so we hope you're right. If we get a good effects assessment, we'll be happy.

MR. HOGAN: Well, we look forward to working with NMFS closely to develop that.

MR. MITCHNICK: And there are no guarantees, obviously, but we're sort of trying to build into this process the opportunity -- a better opportunity to get a good biological assessment.

I mean, we've been meeting periodically and will continue to meet periodically throughout the licensing process to talk about ESA issues as they come up, whether it's studies, whether it's the effect

analysis. So we'll be having these conversations throughout. And you'll have a -- everybody will have an opportunity to review the draft biological assessment. There will be an opportunity to first look at whether the assessment meets your satisfaction or not, where it needs to be improved, added. So there's that opportunity to improve the draft biological assessment when it's filed as part of the license application.

So, I mean, there are, you know, I think steps sort of built into this particular project that would increase the probability of getting a better document, so hopefully that does happen.

MR. BOWLER: John?

MR. WOOSTER: I'll go real quick here. You were going to say 4 and 5?

MR. BOWLER: Please.

MR. WOOSTER: Okay. We had talked earlier about some resolutions that are in your binder and filed today. Those are basically resolving the technical differences between the parallel NMFS and YCWA studies, and so part of resolving the dispute, those resolutions are going to come forth in the applicant-proposed studies, the parallel ones.

So there were a couple language issues with, I think, with NMFS dropping their study and picking up the

applicant's study. Those primarily are that these two studies, which are channel morphology above Englebright and riparian habitat above Englebright, NMFS needs to be listed as a jurisdictional agency, and we believe that's the case because of EFH habitat in the project-affected reaches that are being evaluated.

And secondly, NMFS needs to be listed as an agency to contact if there's any study variances. Currently NMFS is not in -- I guess it would be section 2.0 and 5.0.

MR. HOGAN: That's fine with us.

MR. WOOSTER: And the last remaining item would be pertaining to study 5 where in the determination FERC had said that they were not requiring a wood budget as NMFS had asked in our study plan, but YCWA had filed an updated study plan post the original revised study plan. It came on September 8th, I believe. And within that study plan they have proposed -- they called it a large woody material budget. So I was looking for clarification from FERC that the determination was accepting YCWA's proposed wood budget as in their study plan and that the part they weren't requiring was the wood budget as NMFS was requesting.

Should I try again?

MR. WANTUCK: Which one do you want, John?

MR. WOOSTER: Well, I would prefer mine, but as part of the resolution I'm willing to move forward with what YCWA proposed, provided that's what you were requiring, because in the determination it wasn't saying we're picking this one and not NMFS; it just said we don't see the need for a wood budget.

MR. HOGAN: We're comfortable with what YCWA said before, if you are.

MR. MITCHNICK: Well, at the time we reviewed the study plan, we for some reason did not evaluate the revisions to it, so our determination was based on the revised study plan and not the revised-revised-revised. But yeah, I think we'll be okay with that change.

MR. WOOSTER: Okay. That's it.

MR. BOWLER: Would you just remind us which element that was in reference to so we can record it?

MR. WOOSTER: The YCWA study is 6.1, but the NMFS study . . .

MR. HOGAN: 5.3.

MR. WOOSTER: Study 5, Element 3.

MR. HOGAN: And the decision is we go with the YCWA version of that. We're looking for the commitment, and I think you both just gave it.

MR. BOWLER: Thank you for being so quick with that.

Who in the observer audience would like to make a comment? One, two, three, four. So we have four, and we have -- so how about four minutes each? Okay? And we'll just start with the gentleman from the Sports . . .

MR. SHUTES: Once again, Chris Shutes from the California Sport Fishing Protection Alliance. I just have a couple of things to say. It goes back to what was discussed earlier this morning.

Mr. Mitchnick, I believe it was, said that the Commission seeks to keep the door open and suggested that the standard reopener is the means to do that. However, a reopener is a completely discretionary action that FERC has almost never exercised in order to prevent -- improve conditions for fish, at least in California. And we can provide some examples of situations where there were very severe problems and FERC declined to exercise a reopener in some cases that was requested by CSPA.

Mr. Lilly expressed concern about a defined trigger without details. The problem is that either there's a defined trigger or there's a purely discretionary threshold that needs to be met.

Part of that discretion involves procedural and regulatory requirements that go along with starting a

process from scratch, which might not be the case if there were a predetermined provision in a previous proceeding.

The overwhelming choice by FERC, in my opinion, and experience, because we may be looking at 401s, biological opinions, and other regulatory requirements, has been to push questions that have been possibly suggested as appropriate for reopeners out to relicensing; and therefore, the reopener, in our experience, has become a procedural category that ends up being a substitute for action.

We don't think that pushing study out to inform reintroduction of anadromous fish for 30 to 50 years is consistent with the overall Federal Power Act mandate that licenses issued be consistent with the public interest.

Thank you.

MR. BOWLER: Thank you.

MR. JOHNSON: Hi. My name is Brian, B-r-i-a-n, Johnson with Trout Unlimited. And I would just like to flag, I think, three issues that came out that are important with suggestions for the panel.

One is the earlier question about whether reasonably foreseeable is a different objection. And I would like to request that the panel in its

recommendations be as clear as you can about what level of foreseeability is required for it to be reasonably foreseeable.

And Mr. Mitchnick and Mr. Hogan both, you know, indicated, you know, made some statements that it'll be easy to find in the record, we don't know if it'll happen and it's not reasonably foreseeable, but it would be good if through your recommendations and the Director's final determination the Director can more clearly say than we've heard in the past what that's all about and what level of foreseeability we need.

The second one is similar to that. I think we had a very clear statement from Alan about whether the ILP studies are intended to inform the terms and conditions that FERC staff write were also to inform terms and conditions that mandatory conditioning agencies write, and it's a paraphrase, but, you know, said we have to decide what information we need but not what information you need to develop your mandatory conditions. And I think it's safe to say that a lot of observers don't read the ILP that way.

And, you know, my organization participated in the development of rulemaking, and we think the studies are intended to inform the whole license and not just the parts of the license that FERC staff write.

But it would be good if in your recommendations you could tee up for the Director a clear statement, if, you know, he's relying on that interpretation, if that's what it is that's going on, so that would clarify that.

And the third one is, I appreciate the clarification that we got from everybody early on that the staff's statements today on the study determination aren't meant to limit it or to decide the scope of Section 18 authority, which, you know, of course, they couldn't. But given that that's true and that there are other mandatory conditioning agencies that may feel like they have similar authority and some jurisdictional issues even for FERC that won't be decided until we get the final licensing order, the suggestion is that you think carefully about whether you want to define the studies in a way that effectively prejudices agencies' ability to develop some of those mandatory conditions.

We've got a little bit of a circular thing here where we don't know for sure if that authority exists or what the jurisdictional calls will be or if they would exercise the authority, and we don't have fish there yet because it hasn't been exercised, but if the information that goes into deciding whether it should be exercised isn't collected, that has the effect of prejudicing that decision. And so I would keep that in mind.

Thank you.

MR. BOWLER: Thank you.

MR. MARTIN: My name is Ramon Martin with Fish & Wildlife Service.

And one thing that I wanted to bring up regarding some of the discussions in the information requested brought up by NMFS and that are clearly in dispute is that a lot of this information is also critical so that the appropriate license conditions that are developed are consistent with the final restoration plan for the mandatory restoration program.

It's a comprehensive plan filed with FERC under Section 10(a)(2) of the Federal Power Act. And so we have ten actions and four evaluations in the Yuba River which addresses a lot of the information requests that are being sought out by NMFS, which include and range from reducing and controlling flow fluctuations to avoid and minimize adverse effects to juvenile salmonids, facilitate passage of spawning adult salmonids by maintaining appropriate flows through the fish ladders or by modifying the fish ladders at Daguerre Point Dam, and action 9, facilitate passage of juvenile salmonids by modifying the dam face at Daguerre Dam.

And then we have four evaluations, one of which is evaluate the effectiveness of pulse flows to

facilitate emigration; evaluation 4, which is evaluate the benefits of restoring stream channel and riparian habitats of the Yuba River, including the creation of side channels for spawning and rearing habitats for salmonids.

So a lot of these actions and evaluations were developed back in 1995 for a working paper, and again has been addressed and gone through the NEPA analysis which included YCWA participation through that NEPA analysis under the Central Valley Improvement Act.

And the final restoration plan was finalized in 2001 and filed accordingly as a comprehensive plan with FERC.

MR. BOWLER: Thank you.

MR. EDMONDSON: Steve Edmondson, National Marine Fisheries Service. And I want to take advantage of having a court reporter here so I can state for the record how impressed I am with how well prepared and professional everyone was, and the panelists, YCWA, FERC staff, our folks. I think it went really well and your constituents are well served. Thank you very much. I this was outstanding and very professional. And thank you particularly to the folks who traveled from out of state. Much appreciated.

MR. BOWLER: Thank you very much.

We have a few more minutes. Is there anybody else from the observers that would like to speak?

(No response.)

MR. BOWLER: So with that, we --

MR. WOOSTER: Can I ask the panel a question specific to study 7.1, the tailrace study at Narrows 2?

I think that for the most part everyone here has kind of agreed that we've got a long ways to go to come to an appropriate plan. I think both FERC and YCWA expressed interest in revisiting the approach with NMFS and figuring something out.

At this point I think the one positive step we have is that YCWA is implementing a document-monitoring program at Narrows 2.

Given that the panel needs to make its decision in about seven business days, and I'm pretty sure that's not enough for this group collectively to develop a new tailrace study there --

MR. HOGAN: Aren't we going to meet at happy hour?

MR. WOOSTER: Well, let's put it this way. It took the group here collectively about two weeks to kind of work up some new language for some I'll call it relatively low-hanging fruit for the geomorph and wood studies, and we're dealing with a much more complex,

expensive issue where there's a potential take going on of Western species fish. It's going to, I think, take a while to work that out.

How does the panel foresee trying to treat a the topic such as this that I think, in all likelihood, is not going to have a new draft of the study before you need to issue your recommendations?

MR. BOWLER: I'm going to conclude the meeting with next steps --

MR. WOOSTER: Okay.

MR. BOWLER: -- and I'll save that until then. But it's a good question.

MR. LYNCH: Before you do that, also, I'd said at a break John, Tom and I would get together. We did quickly. I don't think we really concluded what we wanted, but I think the ballpark we're talking about in terms of nodes is two to four.

MR. WOOSTER: I think that's fair, yeah.

MR. LYNCH: Just to give you an idea, it's something that is very manageable.

MR. BOWLER: You said two to four?

MR. LYNCH: Does that sound about right?

MR. WOOSTER: Yeah. Additional nodes for hydrologic analyses.

MR. LYNCH: Yeah.

MR. BOWLER: Thank you very much.

MR. LYNCH: You're welcome.

MR. BOWLER: Any other questions left over from the day? I mean minor questions.

Okay. With that I was going to ask the Yuba County Water Agency to go first with eight minutes.

MR. AIKENS: Sure. I won't take eight minutes, though. Hopefully you won't mind.

I'll like to really thank the panel. I'm impressed with the preparation that you put into this. You understood a lot of the issues well, and we appreciate the hard work that you put into preparing for today. Hopefully that continues forward with your report.

And we're just looking for clarity. I mean, we want to move forward, and I think we've got a great history of collaborating with all the different parties. We want to get consensus. We want to move forward. We'll do what we reasonably can to do that. But as you realize, there's some issues there that we need guidance from the panel, we need guidance from FERC. And I guess the bottom line is, what FERC says we'll do, we'll do, and we're happy to do that.

Appreciate Alan and Ken coming all the way out from the East Coast. I realize now it's quite a few

hours later, and after a long day I'm hoping, you know, maybe there is a happy hour.

I'd like to say, too, that, you know, I think our team made its arguments during the session. I don't really feel that we need to add to that at this point in time. I think you heard us clearly. And if there's any questions, we'd be more than happy to respond. But I just want to say thanks to everybody.

MR. BOWLER: FERC, if you'd like to use as much of the eight minutes as you'd like.

MR. MITCHNICK: I don't think I'll use all eight minutes, either.

I, too, want to thank you everybody for participating, not just in this meeting but the whole ILP process up to this point. You know, I think a lot of good has come up to this point and hopefully a lot more good will come out of this process.

You know, the ILP is certainly not for the faint of heart, and it is a difficult process. But the good news is we only have four more years left, so I think we'll make it.

We've identified a number of issues where we will continue to have discussions, and if we can wrap up things and provide it to the panel, then great. If it takes longer, but we could, you know, input it into the

Director's order, you know, on the 29th, then, you know, I don't want to preclude those opportunities, or even beyond that, but certainly up to that point. Certainly don't ever want to stop the discussions between agencies and the applicant and everybody else in the process.

You know, certainly the big issue here is the nexus question, and I know there's been a lot of discussion. I don't have anything new to add for the most part, but I just want to sort of reinforce the Commission's practice.

This isn't the only project. We're not picking on, you know, this project. This is sort of the way the Commission has dealt with these types of issues.

You know, anadromous fish are not found upstream of Englebright Dam. Englebright Dam is a nonproject dam that blocks anadromous fish. Therefore, the project doesn't affect anadromous fish upstream of Englebright Dam. Therefore, there is no need to study it.

The argument that the penstock provides a passageway for fish, you know, is a very novel approach to make, which I don't think I've ever heard before, but, obviously, the river has been providing a passageway for fish for millions of years, but I don't believe penstocks have for very long, and especially

where you have a 150-foot elevation change over a 750-foot length.

So I think most people would agree that although the project may affect passage up to the base of Englebright Dam, and I think that's what we're talking about, the issue there was yes, the powerhouse could affect fish passage, but certainly it doesn't affect fish passage to the upstream part of the Basin.

But that doesn't mean that -- this approach that the Commission had doesn't mean that we've ignored this whole issue and, you know, certain reopeners, and there are issues with reopeners, but that certainly is a way to go.

And if it's possible to come up with more specific license articles instead of the generic reopener, then we certainly would want to look at that.

If it's possible to come up with triggers in a license article when, you know, certain things would happen, certain studies would be required, you know, we've done that before. That's certainly an approach that we can take.

So, you know, if we could be innovative, we can work out an approach that even though you may not agree with us deferring these issues, at least we can deal with them at the proper time.

You know, NMFS concern about that we are limiting the scope of their Section 18 authority, you know, nothing in the record, I would hope, would indicate that, and we can't and we don't and we won't. But Section 18 authority can be a very, you know, important aspect of this whole process.

Certainly you can reserve authority, but you could also issue a Section 18 prescription with anything you want in it. Studies. If you want to come up with a plan of study that would be implemented once the license was issued and your Section 18 prescription would kick in, well, that's an opportunity for you to be innovative and sort of address those types of issues, you know, through your Section 18 authority if you don't get what you want from the Commission's licensing.

So those are options which I think are important from the Section 18 perspective or from the Commission's license articles in any license issued for this project, you know, and hopefully we'll have more discussions about that as the process goes on.

I just want to touch one more time on this nexus issue with the study that was done by MWH. You know, we certainly don't disagree that the project potentially could have an effect on fish passage options. And that report is an important report.

But, you know, while there may be a nexus between fish passage and the project, there is no nexus between the project and fish passage. So we're going to have to deal with those potential issues in the future.

MR. HOGAN: Can I clarify that?

MR. MITCHNICK: Yeah.

MR. HOGAN: Nexus between fish passage options or fish passage facility options and fish passage.

MR. MITCHNICK: I'll accept your interpretation of that.

And so, you know, those issues will have to be dealt with. I mean, you know, once there are plans for passage and there are issues, you know, there may have to be some design changes to the project, changes in operation, whatever may be needed to facilitate, you know, fish passage in that part of the Basin. So, you know, we acknowledge that, and that certainly would be an issue that will have to be dealt with.

Just one minor point, and I'll close on this. In terms of getting information into the record, I mean, we will try to give the opportunity to file things, we will file things, you know, we hope you would file things, but it's not necessarily critical that things are filed. If they're publicly available, they can be utilized, but having it in the FERC record makes it a

lot easier for people to access. But just because it's, you know, not -- hasn't been officially filed with the Commission doesn't mean that the Commission or anybody, you know, still can't utilize that information. If it's readily available, it just makes it even more readily available to people. If it's not readily available, this might be the only place people could find it, so that's why it's important to do that.

So, you know, that's all I have. Thanks.

MR. BOWLER: Thank you.

MR. THOMPSON: I think I'll start and then if some others on the NMFS team want to add. I'll try to be brief.

Earlier this morning I said the dispute process is not necessarily a negative thing, and I think that's true. I think NMFS has experienced an increased rate of progress coincident with greater FERC staff involvement.

We've seen progress today. We've come to agreement prior to this meeting in a short time frame and some additional agreements here. So I think that's a positive.

It's analogous to a 10(j) meeting that we had. The ILP now allows us to have this dispute process. We didn't have it in the old licensing processes. And so think of a 10(j) meeting when we put forward a proposed

terms and conditions and FERC rejects them, we -- it's common for us to call a 10(j) meeting and dispute their decisions. Really, what we're doing is we're doing it here earlier in the process, because often our 10(j) recommendations and possibly in the future our Section 18 recommendations or preliminary prescriptions will be rejected based on the lack of information. That's why we're here in the study plan process now disputing early.

And we also think it's positive that NMFS has had the opportunity to present our request in front of a panel today. That's a new dynamic. Normally we're dealing directly with FERC or with licensees and other licensing participants. But today we had the opportunity to have an expert panel here, and we hope that you will take everything that you heard today and give the Director of OEP an informed recommendation.

I just want to repeat a few things that we pointed out to you today we want you to -- we'd like you to take a look at again.

NMFS listed several actions that we believe -- several actions for placing anadromous fish in the Upper Yuba River watershed that are reasonably foreseeable. And we think that it would be a good idea for -- to determine or weigh in on what is reasonably foreseeable,

because what we're hearing from FERC is that fish aren't there. It's true. They're not in the Upper Yuba now, the anadromous fishes. But our point is that over the temporal scoping established by FERC, which can go up to the year 2046 or the year 2066, they could be there. In fact, it's likely they'll be there.

And we have a draft recovery plan now that will go final in 2012, next year, which identifies the Upper Yuba River as important for the recovery of spring-run Chinook and steelhead. And it specifically identifies conceptual scenarios for putting fish in the Upper Yuba River.

We discussed nexus today. I think maybe one of the points I want to impress upon the panel is that nexus always seems to be expressed by OEP staff in terms of Englebright Dam and the blockage of upstream passage. But going back, we have laid out for you several actions that could place fish up there independent of a Section 18 prescription here. And once those fish are there, they will be subject to all of the project facilities on that table I was holding up. And we believe that those project effects should be assessed.

And what we're hearing is none of those should be assessed. We're hearing that all study, any study should be associated with the study of Englebright Dam.

I want to point out that the study plan determination itself, on page 38, in footnote 13, states that the Commission expects any studies of fish passage would be related to NMFS's ongoing ESA consultation with the Corps.

That just seems like an extreme view. It seems like there should be a shared responsibility. It doesn't appear that the Corps of Engineers would be the entity that would study, for example, fish passage effects of Colgate powerhouse or Our House Dam, well upstream of their facility.

NMFS welcomes the discussion of triggers. We agree, however, they have to be firmer than let's just wait for a license reopener, because often we end up in the next license term, as was stated earlier.

We also have not -- NMFS has repeatedly petitioned for reopening of licenses in California and elsewhere and we have not been successful, even when our petition involved placement of a newly listed endangered species or threatened species directly in the project area. So if we work on triggers, we've got to be specific with those.

And I think just one last statement about collecting information is that we heard a lot from OEP staff today that there are no firm or certain plans in

place. These actions we discussed really aren't reasonably foreseeable because there aren't any plans in place.

I would say that any plans that need to be -- that will be put into place in the Upper Yuba will involve project effects. Any plan that we were to develop now, in the absence of evaluation of project effects, would be highly criticized. And we believe those evaluations should be done in the licensing proceeding for this project.

Rick, you want to say something?

MR. WANTUCK: Yes. Just something to add.

The Narrows-Englebright hydroelectric complex has three basic components that allow the projects to function as they do today. It's the dam that creates the head for the hydroelectricity, it's the hydro plant that serves the Narrows 1 facility on the south side of the river, and it's the FERC-licensed facilities on the north side that serve the project works for the Narrows 2 plant. All these facilities work in conjunction to do what they do.

For Narrows 2 we established earlier today that the project essentially reroutes most of the entire Yuba River flow through the project works from upstream around the dam to downstream.

To us it seems like simple common sense that both the Narrows 1 and Narrows 2 project works were constructed in such a way that preclude anadromous fish migration from downstream to upstream.

When the projects were conceived and the predecessor of the Commission looked at this, they could have at that time balanced the natural resources and compelled fish passage as a project condition. They did not.

We're now in a new license cycle and we're asking the Commission to now take another hard look at this issue and see whether during the next 30- to 50-year license cycle that is this not a reasonable balance of natural resources.

So NMFS continues to assert, after all that was said and done today, that the Narrows-Englebright complex constitutes a trio of fish passage barriers under the current baseline conditions, not the pre-project conditions with only the dam in place, but the baseline as it is today, the dam, the Narrows 1 project, the Narrows 2 project. That is the proper frame that we have to look at this in.

Now, having said all that, you know, I realize we have a difference of opinion. I just wanted to restate ours in response to Mr. Mitchnick's points.

But I think we got very close this morning and probably reached agreement that there are very real effects having to do with the outfall of the plant. We spent a lot of time on this this morning, having to do with the need to protect fish from injury or death associated with the possibility of them getting into the outfall or inside the plant or somehow being injured by plant operations.

So I hope that the panel will continue to take a hard look at that issue and help us come up, via your recommendations, help us come up with a robust plan to study the effects on the resource from that angle. If you want to put aside the other angle, at least treat that one seriously.

Finally, I want to reiterate the thanks that everybody has expressed to the panel. I know this is a very hard job and a very short turnaround time with a lot of information to assimilate, so we do appreciate you and the task that you've taken on. And we're confident that you're going to give a judicious response and make a good recommendation to the Commission.

And then I want to thank everyone else that has come here today, in particular FERC staff that's come across the country, everyone else that's traveled here. I think it's been a good, productive dialogue, and it

represents another step along the way, I think, toward a successful licensing effort.

I'm sometimes reminded at this stage of a process like this the old saying "It's always darkest before dawn." And we do have some disagreements to work out, but I'm confident that as time goes on the disagreements will diminish and the areas of commonality will show themselves and will come to a very wise and judicious decision about what to do over the next 30 or 50 years, whatever the license span is.

It's a very important decision, obviously, that the Commission needs to make here, and so we do appreciate the kinds of things that you have to weigh in making your decisions.

So with that, I would like to thank the panel, and that concludes our remarks.

MR. BOWLER: Thank you.

Richard, do you have anything you wanted to say?

MR. CRAVEN: I can't think of anything.

MR. BOWLER: David?

MR. WHITE: Only that all of you have been involved with this for a long time now, and I thought people tried very hard to be productive today, and it was appreciated, and I wish you the best in continuing

that in the future. I know it's hard, but we achieved a lot today.

And we also thank you all for writing carefully. A lot of good writing we got to read.

MR. BOWLER: So we've got ten minutes left, and I promise you I don't feel obligated to use it all.

One minor thing, if anybody hasn't signed in who's still here, please sign in at the water table. I think it's still over there.

And then I also would like to thank everybody for their participation today and the work that the various parties have done to try to take some things off our plate coming into here and resolve some things and the cooperation today and continuing those efforts.

I really want to thank my fellow panelists for the work that they've done with me in preparing for the meeting today. I think we literally spent in preparation about 30 hours on the phone in addition to other prep time. And I got documents from both of these gentlemen on the weekend.

And, Richard, I want to make it clear, what he got out of this was a free trip to Sacramento.

And I'd like to share with NMFS staff that David has been great to work with and very agreeable, but not too agreeable.

The next step that has been raised a few times today, the panel is expected to deliver its findings and recommendations to the Director by the close of business on December 9th, and then there will be 20 days, I believe, for the Director to make his determination. So that is conveniently due on December 29th.

There was a question about how we'll handle issues that are somewhere in the stage of resolution outside of the -- through the discussions among the disputing parties and the project proponent.

Anything that's been resolved we really can't take off our plate until it's removed as a dispute item, so we need you to work out the final details and get a letter into the record that says it's been removed as a dispute item.

And then, so those -- the things that have resolved, we ask you to do the final paperwork on those, get a letter in to the secretary to that effect.

Anything that is partially resolved we'll have to handle in a manner that we'll have to write up our recommendation.

We may recommend that if it's resolved, obviously, if it resolved in the 20 days between our recommendations and the Director's decision, we may say something in our recommendations about our attitude

towards your agreement. In other words, we might say here's what we recommend if these guys don't get it together on this issue; however, we understand they're headed in this direction, and if it's resolved between our findings and the Director's decision, and it comports with what they've talked about, we recommend you adopt their agreement.

That's one way we can handle those "tweeners." So I think that gives you a sense of what we will be doing.

We'll again be sticking with 5.9(b), that's our mandate, and the Director, as the regulations say, is bound by policy and practice. And you'll be hearing from us on the 9th and from the Director on the 29th.

And with that, if there aren't any other questions . . .

MR. AIKENS: I just have one more thing. I want to thank Carole Browne --

MR. BOWLER: Yes.

MR. AIKENS: -- for letting us work at our pace, not insisting upon breaks and everything. It's just made the day more efficient. So it's a lot of hard work to do that and we appreciate what you've done. So thank you.

MR. BOWLER: Thank you.

MR. MITCHNICK: Just one clarification. The studies you mentioned that were resolved, study 4 and 5, were those the two?

MR. BOWLER: Yeah.

MR. MITCHNICK: 4 and 5? Are you expecting something from us on those, that resolution?

MR. BOWLER: I think I needed something from NMFS on those.

MR. HOGAN: So we would probably have to do something first.

MR. WOOSTER: The way our filing read was here's example language and maps; if these are included in the updated determination, if you will, then we will remove the dispute, so there's . . .

MR. MITCHNICK: Do you need the -- I mean, based on that, the Director would modify the study plan. Would you need to see that before you issue a determination or will you go on the --

MR. BOWLER: We will make a recommendation unless they've been officially withdrawn as dispute items.

MS. KEMPTON: Is there such a thing as a conditional withdrawal?

MR. BOWLER: Certainly in terms of our workload, we will be as liberal as we can be.

MS. KEMPTON: No, I mean in NMFS we conditionally withdraw the dispute, provided that the condition of the Director modifying it according to this language is satisfied.

MR. BOWLER: I don't know the answer to that, so I think it's best that I get back to you on that.

In the past, when I've been involved, there's been two scenarios. One is where there's -- if something was more of a clarification than a Director's decision and the staff was able to clarify it, then the disputing agency withdrew it based on the staff clarification.

The other scenario is where the Director actually signed the letter saying I'm modifying this prior to the panel's decision, and then disputing agencies respond to the official . . .

MR. HOGAN: I think that's the route we're going to have to take.

MS. KEMPTON: Is that feasible for you?

MR. MITCHNICK: Well, we'll try our best to . . .

MR. WANTUCK: When transcripts will be available, will it be on the FERC record? Is that the plan? Do you know how that's going to work?

MR. BOWLER: In the near term you have to buy

them. They do eventually come up on the public record, but they won't be, likely, before the 9th in the public record.

MR. WANTUCK: I'm just thinking hopefully where we had verbally agreed that this would be a source to go back and verify it, but I think we can probably take a shot at exchanging something to see where we stand first, but then we might go back to the transcript.

MR. HOGAN: I think we're in a good place. We've already got a lot.

MR. WANTUCK: Okay.

MR. BOWLER: Are there any other questions?

(No response.)

MR. BOWLER: Well, with that, two minutes early, I'll close the meeting of the dispute panel.

(Time noted: 4:58 p.m.)

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