BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

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IN THE MATTER OF: : P-2485-063

FIRSTLIGHT HYDRO GENERATING COMPANY : P-1889-081

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Northfield Mountain Visitors Center

99 Millers Falls Roads

Northfield, MA 01360

9:10 a.m.

Monday, November 25, 2013

The above-entitled matter came on for scoping meeting, pursuant to notice, at 9:10 a.m.

P R O C E E D I N G S

MR. HOGAN: All right. Good morning. My name is Ken Hogan. I'm with the Federal Energy Regulatory Commission. We're here for the re-licensings of the Turners Falls and Northfield Mountain Projects and the study plans -- and a study plan discussion on how the closure of Vermont Yankee may influence study timing and study methodologies and things like that -- or it may not.

So I'm hoping for a good, robust discussion of what we think needs to be addressed and how it should be addressed today.

A couple of housekeeping. Everybody knows where the restrooms are: Over there.

No punching today. Okay?

And I've invited Entergy here today to give us a description of how they envision the closure to take place specifically with when will the effects on the river be either discontinued or limited, and what the timing of that is, and what the magnitude may be.

And I want to keep that discussion to that aspect, not to why aren't you decommissioning it in a different way. I want to know what their proposal is and what their projected effects are for the river. And that's what's going to influence our studies. So if we can work with that, that would be great.

With that, I'd like to go around the room and just start up introductions.

MR. ETTEMA: I'm Nick Ettema. I'm a fisheries biologist with FERC.

MR. SEARS: Mike Sears, fisheries biologist, FERC.

MR. ARNOLD: Steve Arnold, fisheries biologist, HDR contractor for FERC.

MR. DAVID: Owen David, New Hampshire Department of Environmental Services.

MR. SPRANKLE: Ken Sprankle, U.S. Fish and Wildlife Service.

MR. PUGH: Don Pugh.

MR. WARNER: John Warner, U.S. Fish and Wildlife Service.

MR. SLATER: Caleb Slater, Mass Division of Fisheries and Wildlife.

MR. LEDDICK: Jesse Leddick, Mass Division of Fisheries and Wildlife, Natural Heritage Program.

MR. HAZELTON: Peter Hazelton, Mass Division of Fisheries and Wildlife, Natural Heritage Program.

MR. MCDAVITT: New Hampshire Fisheries Services.

MS. GRADER: Melissa Grader, U.S. Fish and Wildlife Service.

MS. KENNEDY: Katie Kennedy, Nature Conservancy.

MR. RAGONESE: John Ragonese, TransCanada.

MR. HANSON: Brian Hanson, Normandeau Associates.

MS. DONLON: Andrea Donlon, Connecticut River Watershed Council.

MR. BATHREY: Michael Bathrey, landowner-member of Connecticut River Watershed Council and the Connecticut River Streambank Erosion Committee.

MR. MINOR: Tom Minor, Franklin Regional Funding Board and the Connecticut River Streambank Erosion Committee.

MR. BENNETT: John Bennett, Williams Regional Commission and the Franklin Conservation District.

MR. SEIRA: Bob Seira, FirstLight Power.

MR. CHRISTOPHER: Tom Christopher, New England Flow.

MR. MEYER: Karl Meyer.

MR. WARD: John Ward, Gill Select Board.

MS. TOMICHEK: Chris Tomichek, Kleinschmidt Associates and FirstLight.

MS. WOOD: Julia Wood, Van Ness Feldman, the licensing Counsel for First Light.

MR. SULLIVAN: Tom Sullivan, Gomez and

Sullivan, Consultants for FirstLight.

MR. HOWARD: John Howard, FirstLight.

MR. WAMSER: Mark Wamser, Gomez and Sullivan.

MR. CROCKER: Jeff Crocker, Vermont Agency of Natural Resources.

MS. WILL: Lael Will, Vermont Fish and Wildlife Department.

MR. DAVIS: Eric Davis, Vermont Agency of Natural Resources.

MR. DEVINE: John Devine, HDR, consultant to FERC.

MS. BLAUG: Elisabeth Blaug, FERC Office of General Counsel.

MR. HOGAN: All right.

COURT REPORTER: Well, wait. There are some folks in the back.

MR. HOGAN: Oh. Sorry.

MR. SKIBNIOWSKY: Steve Skibniowsky, Entergy-Vermont Yankee. I'm the specialist for radioactive effluents.

MS. DE WALD: I'm Lynn DeWald from Vermont Yankee. I'm the non-rad environmental specialist.

MR. SLADE: Mark Slade, observer.

MS. GRIFFIN: Jennifer Griffin, TransCanada.

MS. O'DEA: Erin O'Dea, TransCanada.

MR. CUBITNASS: Bob Cubitnass, Department of Environmental Protection.

MR. WICKER: Bob Wicker.

MR. HOGAN: Thank you. Thank you for that.

So the objective of today's meeting is really to get a good understanding of what -- how the potential closure may affect the current baseline and that's what we want to get at, and then have an understanding of how that change in baseline and what may affect studies, which studies it may affect, and how it may affect them.

We outlined in our letter noticing the meetings, you know, we identified kind of three components that could be affecting, the timing of the implementation could affect the methodologies of the study or it could be both.

There is also another component that we've kind of identified. And there's an interrelationship with many of the studies. So if one study's affected that, you know, before we determine that this study may be affected by the closure of Vermont Yankee but another one may not, but the one that is affected has an integral role into the other study, we kind of need to identify those too.

So I want to kind of put that out there to start thinking about that now. We're going to get a -- have a presentation from Entergy, just nuts and bolts of what

they're predicting of what and when the effects to the river may take place under their current plan.

And then what -- in the agenda we have an opportunity for a caucus for stakeholders, if you want to take an opportunity to digest what we've just learned, talk amongst yourselves about what do we think that means for the study plans, that's an option. If you feel you want to move forward without the caucus, that's an option, too. I just put it in there in case you folks wanted to have that conversation.

COURT REPORTER: If you have more agendas, there's some folks who came in after the first pass-around.

MR. HOGAN: Yes.

Who needs an agenda?

(Documents distributed.)

MR. HOGAN: Because we are recording the meeting, if -- before speaking, if you could identify yourselves for the court reporter, that would be tremendously helpful. And we appreciate that.

MS. DONLAN: There's one study that wasn't identified by FERC as being affected by the VY shutdown that I'd like to --

MR. HOGAN: Add to the list?

MS. DONLAN: -- express an opinion that I think it should be added. When is --

MR. HOGAN: Okay.

MS. DONLAN: -- the time to put that into the agenda.

MR. HOGAN: Let's put it in now. What is it?

MS. DONLAN: The erosion studies, the one that's -- the second one, 3.1.2, on page 3-30 of the revised study plan, past three lists the various -- about nine different problems of erosion. One of them is ice or debris. And the study design says that, you know, of these nine, we think four of them are the most important causes of erosion.

MR. HOGAN: Okay. You've made your point. We can put it up for discussion. I agree --

MS. DONLAN: Okay.

MR. HOGAN: -- with you. So we'll put it on the agenda. We will address it. In numerical order, it will come first.

MS. DONLAN: Okay. Good.

MR. HOGAN: Yeah. If any of you feel that there's a study that should be discussed that we have not included here -- and maybe a study that we've already weighed in on with our study plan determination -- that would be useful information also. Nothing's off the table here.

Lynn, with that, would you like to...

If I could have you just come up here. If you have a projector, I can bring you a mike, one or the other.

MS. DE WALD: Bring one back here, too.

MR. HOGAN: Sure.

MS. DE WALD: Good morning, everybody. My name is Lynn DeWald.

And I had a call a couple of weeks ago from Ken asking if somebody from Entergy would be willing to come and talk to you guys about what we do know about the closure of Vermont Yankee. And I'll start by saying that what we do know is not a lot.

It was announced in August -- late August of this year that Entergy had decided that Vermont Yankee was no longer economically viable and that we would be closing on December 29th, 2014.

. So what I can tell you about that is current we're planning to conduct business as usual through 2014. And then on December 29th both flow and thermal discharge from Vermont Yankee will be reduced by about 98 percent from what it is currently -- what it's capable of currently.

Beyond that, Vermont Yankee's still -- in the moment they're trying to figure out what the org chart is going to look like. So this is not a fast process that -- we're not getting a lot of information quickly. And they're still trying to figure out what on December 29th the org

chart's going to look like. So that's sort of where we are in the process at our level.

My colleague, Steve Skibniowsky, has been at the plant for 42 years. And, you know, I guess we basically would like to open up for questions if anybody has specific questions. But we don't have a lot more to throw at you.

MR. HOGAN: You say a -- I have a question. -- a 98 percent reduction in flow and thermal discharge of what you're currently allowed. Can you elaborate a little bit on what the current allowance is?

MS. DE WALD: So right now we have -- we have seven pumps that -- three are capable of sucking 120,000 gallons a minute. That's our condenser cooling water. And then we have four what are called service water pumps that have a capacity of about 3000 gallons a minute.

And the number of service water and circ water pumps that we use varies depending on the time of year, river flow, ambient temperatures, things like that. So if you look at what all seven pumps could do, that's about 373,000 gallons a minute.

On December 29th, all we're going to be using are two service water pumps at 3000 gallons a minute each. So 6000 gallons divided by 373,000 is about 1.8 percent. It comes out to like 16 cfs, if that's helpful, 16-17 cfs versus 800-and-something, which is more what we do now.

MR. HOGAN: And the -- temperature-wise, you have projections of that?

MS. DE WALD: Temperatures of the service water?

MR. HOGAN: Your discharge.

MS. DE WALD: So generally the way you can look at it, I think, is that whatever we're doing -- if we're running full power or we're running two service water pumps, it's generally a 20 degree delta-T across our condenser. That's not at the point of discharge, but that's -- you know, it still has to go out through the discharge canal, maybe through the cooling towers -- maybe not -- maybe recycling back to the intake.

It just depends on how we're lined up to be operated.

MR. HOGAN: 20 degree C or F?

MS. DE WALD: Fahrenheit.

MR. HOGAN: And you're looking at a 98 percent reduction in that as well?

MS. DE WALD: At least, relative to thermal -- maybe even more.

MS. BLAUG: Can I ask a more general question?

I'm Elisabeth Blaug from FERC.

Does the decommissioning -- is that an NRC -- does it need NRC authorization? I assume so. And if so, is

NRC going to do an EIS or EA on the decommissioning?

MR. SKIBNIOWSKY: I'm not sure what an EIS is. Could you explain?

MS. BLAUG: I'm sorry. Environmental Impact Statement.

MR. SKIBNIOWSKY: I'm not familiar with the process other than it will take a couple of years for us to put together a decommissioning plan, which will include, you know, whatever the company ends up deciding to do, you know, whether it's -- and how long that's going to last and how we're going to go about that.

MS. BLAUG: I think NRC --

MR. SKIBNIOWSKY: But we have two years to do that.

MS. BLAUG: I think NRC is here, right?

MR. HOGAN: No.

MS. BLAUG: NRC is not here?

MR. SKIBNIOWSKY: Not at our behest.

At any rate, one thing to remember with Vermont Yankee going forward is that we're really the first single unit BWR to shut down permanently. There have been no more -- there have been no other full-size BWRs like ours shut down. So some of -- it's going to be a learning curve for us and for the industry on just what the parameters are going forward.

It's -- you know, there are other BWRs that are close. For instance, at Millstone there's a BWR, Millstone 1. However, both other reactors at Millstone are still operating. So as far as just shutting down an entire site, we're the first one to do that.

MR. HOGAN: Is that a public process, or is it just between Entergy and the NRC?

MR. SKIBNIOWSKY: I don't know a lot about the process. My understanding is is that our plan will be put together and then reviewed by the NRC. But I don't know much more about it than that. And I'm not sure at what stage the public gets involved, if any. I really don't know that.

MR. HOGAN: Thank you.

MR. SKIBNIOWSKY: As far as impacts to the river, however, you know, we're going to be probably in a very unique situation here.

MR. SLATER: Caleb Slater, Fish and Wildlife. What was the plant, Yankee Rowe -- it's gone now -- was it a different design?

MR. SKIBNIOWSKY: That was a very small PWR -- pressurized water reactor -- and a very different configuration as far as where it stores its fuel and how it shuts down.

By the way, I should introduce myself again.

Steve Skibniowsky with Entergy Vermont Yankee. Pardon me.

COURT REPORTER: Can you spell that?

MR. SKIBNIOWSKY: Yes, I can. It's S-k-i-b-n-i-o-w-s-k-y.

MR. HOGAN: I'm glad you can spell it.

(Laughter.)

MR. SKIBNIOWSKY: Since I was quite young.

(Laughter.)

MR. SKIBNIOWSKY: So that -- we're kind of unique at this point. We've always been a leader in the industry, and I guess we're doing that again.

Any other questions for me?

MR. HOGAN: I do have another question.

We talked about a 98 percent reduction. Is there a duration to that? Is there a point in time that Entergy envisions that the reduction will be 100 percent?

MR. SKIBNIOWSKY: Well, that service water cooling that we use, will be used to cool our fuel pool, the pool that houses the fuel that's going to be removed from the reactor after December of 2014, that fuel will need to remain in the fuel pool being cooled by that cooling source for approximately five years, at least. It could go as long as six years. So that would take us out to at least probably 2020, 2021 before the fuel can actually be removed.

My understanding also is is that the number of

plants out there looking for fuel -- dry fuel storage casks, there's a finite number of makers of these casks, a very limited number. So it will be in line to get casks as they come in. But it doesn't mean that we're going to have a whole bunch sitting on the shelf waiting for us. So there may be some delays in that process as well.

MR. HOGAN: But once the rods are removed from the cooling pool and placed in the dry casks, the discharges --

MR. SKIBNIOWSKY: At some point after that then the fuel pool itself could be, as I understand it in the general way of things, taken out of service.

When that actually happens for our situation, you know, we're putting that plan together now. And we've got some time to -- we have to take some time to make sure the plan is as accurate as can be made.

MR. HOGAN: Okay.

MR. SKIBNIOWSKY: And the company will do that. We're not the kind of people that jump the gun on that kind of thing. We do deliberate very carefully on how that schedule rolls out because it's important. It impacts a lot of people.

MR. HOGAN: But it's at that point in time that any influence to the Connecticut River would cease?

MR. SKIBNIOWSKY: At that point, yes after the

fuel pool is secured, we wouldn't be cooling anything else that I'm aware of, really. Are you just keeping it cool?

(Laughter.)

MR. SKIBNIOWSKY: Now, I actually -- I'm not sure how much longer I'll last. I'm not sure I'll be around for 2020 to be there for that evolution. But who knows? I mean stranger things have happened.

Anything else?

Yes.

MR. MEYER: Karl Meyer.

There was a plan to have NEC close down after almost exposing core back in the mid-'90s. Was that a boiling water reactor?

MR. SKIBNIOWSKY: That was -- You're speaking of Connecticut Yankee?

MR. MEYER: Yeah.

MR. SKIBNIOWSKY: That was also a pressurized water reactor and located -- and I don't know about their operating history. But I do know that that was a pressurized water reactor.

MR. MEYER: Okay. Because there's some --

MR. SKIBNIOWSKY: There's a big difference between the reactor types. And I don't know whether you're familiar with them, but there is a big difference.

MR. MEYER: Okay.

MR. SKIBNIOWSKY: Not just in the way that they produce energy, but also with their design as to, like, where their fuel is stored, that kind of thing. It's quite different between BWRs and PWRs.

MR. MEYER: I just asked because there's probably some lessons that could be learned. There were studies down there in the mid-1970s about adding hot water to the Connecticut pipe -- I mean like in the mid-'70s. So I --

MR. SKIBNIOWSKY: We have Lincoln commenting on that. We have quite a few studies here, too.

MS. BLAUG: I have a question.

MR. SKIBNIOWSKY: All right.

MS. BLAUG: Another question.

MR. SKIBNIOWSKY: Sure.

MS. BLAUG: Is the decommissioning plan going to be constructed in such a way that if economic circumstances change it could --

MR. SKIBNIOWSKY: I'm not a --

MS. BLAUG: -- power up again or --

MR. SKIBNIOWSKY: I'm not piped into that part of the process, really. I'm a -- my background is in radiation protection --

MS. BLAUG: Uh-huh.

MR. SKIBNIOWSKY: -- chemistry, radiation

science, decay of radioactive materials, effluent monitoring. I don't know much about finances, really.

MS. BLAUG: Well, I'm not asking about finances.

MR. SKIBNIOWSKY: Oh, I'm sorry. I thought you said --

MS. BLAUG: Just is it going to be a mothballing project of plant? Is it going to be just the permanent shutdown? Will there be a door open just in case plans change?

MR. SKIBNIOWSKY: A door open for what, now?

MS. BLAUG: Restart.

MR. HOGAN: Restart, start back up.

MR. SKIBNIOWSKY: Well, once you make a commitment to the NRC my understanding -- and I've only been reading this on the NRC website. But once you make that commitment you're kind of in the pipeline for shutting down. I don't know of any process whereby you can take a plant out of storage again.

One of the problems with, you know, for instance, emptying the reactor vessel and draining it down is now you're exposing surfaces of the reactor vessel to a corrosive environment, namely air.

The reactor vessel is a device that you want to have great control over while it's operating. You don't

want any corrosion going on. And so optimally, the reactor vessel should always remain either filled or operating. That keeps the corrosion rates at their lowest level.

The minute you expose the internals of the plant to air -- especially air that's moist -- you start up the corrosion process that you then need to -- you would need to go back and assess how much corrosion had occurred.

It would be almost like taking your automobile engine out, pulling the cylinder heads, and parking it outdoors for a year and then trying to put that back in service. The whole inside would be all rusted and you'd have a big mess on your hands. And that's the same thing with a nuclear -- actually not the same. But it would be much worse in a nuclear plant.

I don't see that as an option.

Any other questions?

(No response.)

MR. HOGAN: Okay.

MR. SKIBNIOWSKY: Thank you.

MR. HOGAN: Thank you very much.

MR. SKIBNIOWSKY: Thank you very much.

MR. HOGAN: Now at this point in the agenda we had an opportunity for a caucus if folks wanted to discuss amongst themselves the information that they've learned just now and how they feel with the planned studies. Is that

what folks want to do?

I'm seeing no.

MR. MEYER: Is that it? Are you going to stay around? Are you here for the day?

MS. DE WALD: Not necessarily.

MR. SKIBNIOWSKY: We weren't invited to be part of any study groups.

MR. MEYER: Okay. I just wanted to know if we have access to you - - . We don't have access to them after this.

MR. HOGAN: Right.

Now they may stay until after the caucus if there are any new questions. But other than that -- .

So a show of hands: Who wants a caucus; who doesn't.

Who wants a caucus?

Okay. I'll move forward.

Do folks need a break?

No. Let's go. Okay.

Thank you very much. Really appreciate it.

I will say tomorrow we have a very similar agenda. We again announced that Entergy was going to be present today because I didn't want -- I wanted to limit the meeting to stakeholders who are involved with the licensing. So if we can keep that as tight as possible for tomorrow's

meeting, I would also appreciate that. But I recognize that that may not happen.

All right. Thank you, Lynn and Steve. I appreciate it. I'll let you go any time you want.

Did anybody have any other studies that they thought they wanted to add to the agenda above and beyond 3.1.2?

(No response.)

MR. HOGAN: Okay. Let's start with the Erosion study, 3.1.2.

Andrea, you put it on the agenda. So let's hear the argument.

MS. DONLAN: Okay.

MR. WARNER: We caucused, a number of us on the phone last week. And it seemed like, before we get into the questions of these studies, we need to understand how FERC is going to actually schedule out the process relative to a delay. So right now the process would have two years of study, 2013 - 2015, and then the license would have to be filed --

MR. HOGAN: 2017, 2016.

MR. WARNER: Right. You know. If we go to -- if we take this down the road for a year, there are a number of studies that either need two years or may need two years. And that would mean seven years after license and

application filing under the current schedule.

So how does FERC --

MR. HOGAN: All right. I was going to have that discussion at the end of the meeting, although we can have it now.

MR. WARNER: Well, I think it's better for us to know so we don't --

MR. HOGAN: Let me start by saying that we have not made any decision about the licensing schedule. We're holding these meetings to get an understanding of what the implications may be for that schedule and to inform the Commission's decision. So we're here to really seek input.

Hypothesizing there could be several scenarios -- and some we're aware of and some we're not yet. But they could be as simple as studies are conducted and, you know, current studies that we've already approved -- absent maybe 3.1.2 -- are conducted next year. And then studies that we feel that are affected may be conducted in 2015 or 2016, depending on what the means are.

If we find that, you know, it's appropriate that they wait five or six years until the -- there is no effect of Vermont Yankee on the river, then, you know, maybe we look at license term extensions. So there's a broad range of tools available to us.

The license term issue extension could not

apply to Northfield Mountain because that's already a fifty-year license. But the others are under a forty year license and it's within the Commission's jurisdiction to issue licenses for thirty to fifty years.

So we have a pretty big tool box to work with. I think our preference is to not unduly delay any of the studies. But we're interested in quality data and relevant data. Collecting data that's on a baseline that's going to change drastically is not in I don't think anybody's interest. We don't feel that we'll make good environmental decisions based on erroneous data so -- and that's why we're here.

The other thing is, if we do do studies and let's say they carry into 2016 and they're basically conflicting with -- pardon me -- basically conflicting with the license application filing deadline.

Now that license application filing deadline is a statutory deadline. We do not have that tool in our tool chest to shift it. That's law. FERC can't change it. So the application has to come in on April 30th, 2016, no questions asked.

But in the ILP we have dealt with this scenario where studies aren't done or completed yet and therefore the data from those studies is not incorporated into the license application.

But the license applications are -- anticipate those holes and have incorporated placeholders into the application for when that study data will become available. And then once the studies are done the licensees are expected to update the license application and then also not only incorporate the new data, but if that new data were to cause any other parts of the application to be outdated or erroneous, they would have to correct those sections also.

Does that answer your question, John?

MR. WARNER: Yes.

MR. RAGNESE: Clarification. When you said updating, that's just -- studies or proposed mitigation?

MR. HOGAN: It could be both.

It's also your analysis of project effects that's, you know -- if you don't have --

MR. RAGNESE: Yea, I was just -- .

MR. WARNER: Okay. Two other questions.

This is John Warner, Fish and Wildlife Service, by the way.

One is if through the discussion here and the Commission's review it's determined that some studies should be delayed to 2015, and some of those would likely require two years of study, I know you can't shift -- so you can't shift the application deadline. But would the study plan determination say you're going to do studies in 2016,

post-filing? Or would all studies in 2016 be considered additional information requests that have to be filed --

MR. HOGAN: No.

When the -- it will depend on the study plan determination. It would not be handled as a -- we basically are approving the studies.

If we found that the schedule needed to be shifted, we would shift that schedule, the study plan determination, in direct -- you know, when I say 'shift,' it's a modification from what's proposed and we would instruct, you know, like any other study plan determination, if we have something that needs to be changed, we tell -- we say this needs to be changed, and then that's the expectation.

MR. WARNER: All right. So one last question just to clarify.

Since Northfield received a fifty-year license at the start when they got their license, they can't get a license to extend beyond fifty years. So if studies are delayed, you know, until 2015-'16, but then there are still questions that are open, the Commission would have to issue a license by the expiration date with some sort of post-license requirement? Is that the only mechanism we have for resolving any further questions?

You couldn't extend the license. So you have

to --

MR. HOGAN: But we can do --

MR. WARNER: -- fit it in.

MR. HOGAN: We can't extend the filing date for their current license application --

MR. WARNER: Right.

MR. HOGAN: -- requirement. But I do believe we can issue annual licenses on a fifty year term.

MR. WARNER: Oh, you can add -- All right.

MR. HOGAN: So that's my problem.

MR. WARNER: All right. That's what I -- I thought you were saying you couldn't -- couldn't do that.

MR. HOGAN: No. What I'm saying is if -- hypothetically if everybody said, you know, we ought to put this all on hold for ten years, you know, there could be an option to amend the current licenses to change the expiration date of the licenses. And I don't know if that's anybody's desire. But, you know, a worst case scenario...

MR. RAGNESE: Just to clarify -- because this is I think a reasonable thing to be thinking about. But that option is only available for the projects. Is that basically what you're saying?

MR. HOGAN: Yes.

MS. BLAUG: The FPA only --

MR. RAGNESE: Yeah. That's what I just wanted

to clarify.

MR. HOGAN: Okay.

MR. RAGNESE: Which is different than annual licenses.

MS. BLAUG: Correct.

An annual license is just -- it just kind of automatically happens when the term of the license expires.

MR. RAGNESE: John Ragnese.

So let's say in your study plan determination, or after a study is completed and there's a need for more information before the license is filed or on time, application. And in either one there is a -- like a series of ten studies that have to be done in over five years, some sequentially. When do you update -- I don't -- I'm not -- or maybe it's one year.

But what I'm trying to get at is that if every time you update your license application with the results of a study, and then you perform an environmental, you know, you have made your environmental package, and you may end up doing your proposed mitigation or, you know, license conditions, do you do that once after all of them are done, or do you do it each one -- or do you kind of --

MR. HOGAN: That's a good question, John.

Typically the way it's handled is that the study reports -- and we know the study reports are dealt

with through Section 5.1.5 of the Commission's regulations, which is the interim study report and comment on the studies and things of that nature.

Once all those reports are done and the reports at the end of the studies are completed, there's no more 'You need to go out and do further study,' you know, at that point in time -- and we can be flexible how we handle it -- my experience has been at that point in time you update your license application once all the studies are completed and you file that in the package.

MR. RAGNESE: And then FERC acts on whether or not they accept the application. Is that correct?

MR. HOGAN: Right.

Yeah, we won't -- While there are outstanding environmental studies that are required by the Commission, as part of our regulations, you know, we say that we will not issue the acceptance and REA notice until those state requirements have been completed. 5.2.1.

Other process questions?

MS. WILL: Lael Will, Vermont Fish and Wildlife Department.

I just want a clarification. So with the decommissioning of Vermont Yankee you were talking about thermal discharge. But there's also the component of entrainment and impingement, which could affect baseline

conditions. And I just wanted to have clarification if that's going to be factored into how these studies proceed, if that's been...

MR. HOGAN: Let me turn that around. We're here. Is that something you want factored into --

MS. WILL: Yes.

MR. HOGAN: -- consideration of how these studies proceed?

MS. WILL: Yes.

MR. HOGAN: That's why we're here.

MS. WILL: Okay.

MR. HOGAN: Okay?

MS. WILL: I just wanted to --

MR. HOGAN: Yes.

MS. WILL: -- get clarification.

MR. WARD: John Ward, Gill Select Board.

There are two things that this brings up to me. One is there is a climate change impact study that was early on in the process dismissed. And I'm wondering if the need for that study has changed now that conditions have changed where Vermont Yankee is closing.

And one of the things that was brought up before Vermont Yankee was closing was the need for the Northfield Mountain Pumped Storage Facility, being as that was built as part of the nuclear build-out in the '70s. And

that of course was dismissed because Vermont Yankee was closing -- Vermont Yankee was not closing there still is a need for a pumped storage facility.

And now that Vermont Yankee is closing, has that changed? And what is the underlying reason for the Northfield Mountain Pumped Storage Facility?

And to do studies of how many fish do we entrap and entrain and spawning habitat that is destroyed, river bank erosion that happens and so on, how do we now weigh that against the loss of the main underlying reason for this to operate?

MR. HOGAN: Okay.

So regarding the need for Northfield Mountain, that's an analysis that will take place in the Commission's NEPA analysis. Currently we are evaluating the applicant's proposal. And that proposal is to maintain that project. So in order to fully evaluate their proposal we have to do our environmental -- we have to collect the environmental studies. But that need for power and that need for -- that analysis you're asking for will come in the Commission's NEPA document.

MR. WARD: As long as someone is asking those questions.

MR. HOGAN: Okay.

Any other overall process questions before we

-- Andrea?

MS. DONLAN: Andrea Donlan, Connecticut River Watershed Council.

I was just wondering if the group consensus is that, realizing things should happen, you know, soon, but going bumped back, there are probably some longer-term fish populations that people want to look at, you know, ten years or something, is there any mechanism for sharing the costs with, you know, the responsible party, which is not necessarily the hydropower facility? Or I mean how would anyone agree to that when it's not necessarily their --

MR. HOGAN: Anything that would occur post-licensing is kind of not a discussion for today. I mean if you saw -- If you saw --

MS. DONLAN: Well, it kind of impacts thinking on when to do the studies, I suppose.

MR. HOGAN: Can you elaborate a little bit more?

MS. DONLAN: I mean I don't know what the group consensus is. But if people felt like we'll know mostly enough how to proceed within a few years, but there's other questions that may be out there that we'd like to know about that's more like a ten-year time frame but people don't want to wait ten years to do the whole relicensing --

MR. HOGAN: So my suggestion is if we feel that

there's information that we can gather in the near future, in the next three years, let's say, that will give us most of the answers that we need, you know, and adopt a manager approach after the license is issued, if appropriate, then we can require that that license.

If we make a change in project operations and we want to evaluate the effectiveness of that change and, you know, see if there's another step to the change that needs to be done -- that's pretty common in our licenses. But those recommendations would come after the license application was filed when we seek comments on those types of things.

So what I would like to concentrate on is what are those information needs in the next -- in the near future that will help inform special condition requirements later on. And, you know, if our analysis shows that, you know, we're going to need to check back in on 'x' study, then, you know, that will become a recommendation that the Commission staff will make to the Commission, and then potentially adopted into this and made a license condition.

But we can't at this stage require studies that are going to come out post-license.

Does that make sense?

Karl.

MR. MEYER: Karl Meyer.

Just looking ahead as you say that -- or maybe you can tell us -- are pumped storage re-licenses currently being handed out at fifty-year extensions -- or fifty-year terms?

MR. HOGAN: Re-license? Is that what you're --

MR. MEYER: Yeah. I'm just trying to figure out where this might go.

MR. HOGAN: I'll let you explain how FERC does this. And it doesn't matter whether it's pumped storage or...

MS. BLAUG: Yeah. I mean they're case-specific and it depends on, you know, how much mitigation and what, you know, are they going to -- are turbines going to change, are fins going to change. And we look at all kinds of factors in deciding.

If there's a minimal amount of change between the current license and the new license, then it's a thirty-year. Above that then it's forty. And then if there's a significant amount of, you know, changes that cost money and what-not, then its fifty years. So it's really project-specific.

MR. MEYER: Okay.

Do you know of any re-licensing of pumped storage that is being given a new fifty-year license?

MR. HOGAN: I can't say that I know of any

re-licensing of pumped storage.

MS. BLAUG: Yeah. I can't think of any right now, but we can check into that.

MR. HOGAN: Then that license term is only determined once the order is issued. It's not something that's discussed and made by analysis specific to a fifty-year term, discussed in terms of thirty to fifty years. So...

MS. BLAUG: It's a Commission decision.

MR. MEYER: Yeah.

MR. HOGAN: I will say that the majority of the hydro cases that I work on that's a re-license they do not get fifty-year licenses -- the majority; I won't say all -- but thirty and forty-year and forty-five year are pretty common.

Any other questions?

(No response.)

MR. HOGAN: Okay. So we added study 3.1.2, the erosion study, to the agenda.

Andrea, it sounds like you would like us to consider delaying the implementation of that study?

MS. DONLAN: Not necessarily delaying it.

As I mentioned, the task three identifies about nine different causes of erosion. And there's a stipulation in there saying that if we feel that some of these ones we

find are minor causes are more major than we thought, we'll look at them further in the field work. And the field work is currently scheduled for having already been done this fall or is in the process of being done right now. I don't know. Or next summer-ish.

And so if -- when Vermont Yankee shuts down and the river ices up again, and the ice becomes more major than it is now, there is no mechanism currently written in the study that would ever look at that.

So I guess I don't know if the whole thing needs to be changed. But it would be good to consider adding in some clause about, you know, after VY shuts down, something to that effect.

I don't know if anybody else feels that way or what others think -- .

MR. MINOR: No, just -- Tom Minor.

The Stream Bank Erosion Committee in the Regional Planning Board are on this issue as well. We feel it's a significant one.

MR. HOGAN: Let me ask you, do you feel that this is a specific issue that could be addressed well through the entire changing environmental condition? It sounds like you're okay with the study currently as it is moving forward on schedule. But you're concerned that the change in the environmental conditions may provide new

information and the need for additional information or more analysis.

Is that a fair characterization? Meaning if ice becomes a source for - - we're going to have to look at that more closely than I am currently.

MS. DONLAN: I think mostly that captures it, although I haven't thought through whether deciding where the transects need to go could capture. And the idea that there might be ice in the future, that would change the methodology going forward. And I don't think that anyone from DEP has been involved in the transects.

MR. CUBITNASS: We have been involved in that.

MS. DONLAN: Uh-huh. Good deal.

MR. CUBITNASS: Bob Cubitnass, DEP.

The point you're making now is a good one. I think we'll give it a little more thought on how it's going to fit. We do have transects set up. We've got to get a team to look at those transects over a long period of time.

MR. HOGAN: Bob, we're bringing you a microphone.

MR. CUBITNASS: I'm sorry.

Thanks. It's Bob Cubitnass, Department of Environmental Protection.

The point about ice within the erosion studies, I don't think it was looked at specifically -- or is

addressed specifically within those. We're looking at transects; we're looking at the overall erosion rates within that.

MR. DEVINE: Would you tap the microphone and see if it's on?

MR. CUBITNASS: It makes no difference?

UNIDENTIFIED PARTICIPANT: It's on.

MR. CUBITNASS: Great. It's on?

(Simultaneous discussion.)

MR. CUBITNASS: No, it's something I haven't come up with an answer yet. I think we need a discussion on that a little bit. We'll do it tomorrow during this meeting.

UNIDENTIFIED PARTICIPANT: So tomorrow...

MR. CUBITNASS: I'm not looking at a delay of existing study. I'm thinking how we can look at the data that we collect from the existing study and use that.

I think from your point of view -- from FERC's point of view looking at every time you delay the study a year or whatever period of time -- or not -- I'm thinking we can address it going forward.

MR. HOGAN: Okay.

So moving forward -- do you think we can move forward to study as currently written and visit this issue --

MR. CUBITNASS: Yeah.

MR. HOGAN: -- after the first year of study.

MR. CUBITNASS: Yeah.

MR. HOGAN: Do you folks have a concern with that?

MR. MC DAVITT: Bill McDavitt with NMES.

I guess -- One thing that might help this entire process is do we have a map of the thermal plume? I mean we've got an existing condition with the 800 or so cfs that Entergy mentioned. Is there any sort of map that sort of lays out this thermal plume, if you will?

MR. HOGAN: We have looked at that. And we think from our perspective we're looking at effects of VY.

We're taking a very conservative approach, you know, from the discharge point -- or maybe the intake point -- downstream, you know, and specifically went looking for the shape of that thermal pooling. I don't know that that's really a concern for whether or not -- .

Even if that thermal pool becomes dissipated, the background ambient condition of the river is different. So --

MR. MC DAVITT: Well, agreed.

But I guess, you know, when we check the cross-sections I think it's probably a reasonably safe assumption that there's going to be less ice closer to the

run-in by the time you're down here, that effects on ice wouldn't be a problem. So as far as the transect location, it seems like some sort of -- I mean every year is different, natural variability, all the rest.

But just a rough idea about how far that plume extends, with some sort of map with that plume, would be helpful information.

MR. HOGAN: What I want to avoid is -- my intent for this meeting today is not to get into changing study methodologies.

What I want to hear is a discussion that needs to be had; and if the answer is yes or no, that's the information I want. If we feel that the study as designed will not address a specific issue vis- -vis how it's associated with VY and its closure, does that need to come back and -- the stakeholders wanting to seek further discussion.

MR. MC DAVITT: Well, then for 3.1.2, Bank Erosion, given the change -- and what you just said, given the change in Vermont Yankee closure, somehow the process in subsequent meetings, how it will just happen such that a change in the methodology of 3.1.2 occurs.

MR. HOGAN: Okay. Now the question is can you go forward, because the ice isn't going to change next year; the 2015, maybe 2016 -- right? -- based on what we learned

today?

MR. MC DAVITT: No. Winter, January of 2015 -- well, actually -- no, it's going to be -- this coming winter will be warm; January of 2015, it won't.

MS. DONLAN: So the study currently has a combination. They'll use pre-existing transects that have been monitored for many years. Those wouldn't really change.

But there is going to be potentially new transects established. And I think our argument is becoming that when they're establishing those new transects they pick sites that they anticipate you would be able to observe the ice, effect of ice.

MR. HOGAN: And how are they hoping to establish those transects?

MS. DONLAN: I have no idea. I am not part of that.

MR. MC DAVITT: Well, there are the 20 existing transects.

MS. DONLAN: I think the company and DEP staff are going out and choosing them. So they're not actually written into the study plan right now.

MR. HOGAN: But it's in consultation with.

MS. DONLAN: Right.

MR. HOGAN: So it sounds to me like the study

can't address that. Really in consultation at least it's location of those transects.

MS. DONLAN: Yes.

MR. HOGAN: And the location of transects is the only concern, right?

MS. DONLAN: Yeah.

MR. HOGAN: Okay.

MS. DONLAN: So I would say just that that consultation consider that issue.

MR. HOGAN: All right.

So here's my suggestion, and you let me know if you think it works.

Change that: In consultation with the transects under the current schedule, ice be considered maybe a greater extent than what may have been listed already. After the first year study results there's an opportunity to build - - to revisit the study and change the conditions and additional meetings.

So does that work for folks? And if it does, I mean it's -- you know, we don't have to do anything at this time; just move through the study plan as designed and question the process.

If it doesn't work, you let me know and we'll -- Like I said, everything's open. I just want to make sure that we have a process to do the work.

MR. MINOR: Tom Minor.

How do we cover the license period where we could see significant changes of ice impacts in the river? I think that's a very important issue to us to make sure that if there is suddenly a real change in the way in which the banks are scoured in ice-out conditions that it's dealt with in the license somehow.

MR. HOGAN: That's a fair enough statement Tom, though I think it's a little premature. The way we'll get it covered is in five more years -- going to be part of the license application, including recommendations for conditions or measures that you'd like to see in place through the re-license. And that's how it will be covered.

If we agree with you we'll write the requirement into the license.

MR. BATHREY: Michael Bathrey, Connecticut River Committee.

One of the things we've requested previously is to have the FRR repeated before the re-license, which could be 2016 on the three- to five-year cycle, both to make sure it's comparable and repeatable with the methodology, and also this would give us another look at what's happening on the river. So that's something to throw into the hopper also.

MR. HOGAN: Ken.

MR. SPRANKLE: Ken Sprankle, Fish and Wildlife Service.

I'm just going to mention, I have the report with the temperature data I've been collecting. It's not a nice study, but it reflects the water temperature.

The temperature report I was able to release in September quite a few people have received, but I don't think the crest cast. Andrea, you have access. But I could get you a copy of that to help provide some additional information. I can send it to you, Ken.

MR. HOGAN: Yeah.

Okay. Other comments on 3.1.2?

(No response.)

MR. HOGAN: At the end of the meeting we're going to have John Devine kind of go over a summary of where we left things.

Okay. Study 3.2.1, Water Quality Monitoring Study. Any suggestions or recommendations regarding Water Quality Monitoring? Delays, modifications in methodologies?

MR. WARNER: It should be delayed.

MR. HOGAN: Delayed?

MR. WARNER: Pretty obvious. The water temperature monitoring is critical, you know, as part of that.

MR. HOGAN: 2015, delay?

Is everybody okay with that recommendation? Delaying the water quality study until 2015?

Andrea?

MS. DONLAN: I'm fine with that.

I do think that there are a bunch of these studies that have like task one is to do a literature review or task one is to, you know, you write up the sampling plan. And given how rushed the whole study review process was, I just feel that it would be good for us to consider whether those tasks -- those studies with a task one like that actually move forward so that we would have more time to hear what the plan is.

MR. HOGAN: I think that's a valid comment. So field work delay, but anything that's desktop we will recommend no delay and the desktop move forward -- I mean the field work be delayed.

MS. DONLAN: Yeah.

MR. HOGAN: Kind of splitting it up.

MS. DONLAN: So in this study task one was write a sampling plan and get it renewed by NPP. So I would recommend that that happen still as scheduled.

MR. HOGAN: Tom.

MR. SULLIVAN: I guess it is a process -- really affect the last study -- . In terms of particularly the last study, you know, that was a new study.

So my question for you guys is is that, you know, as you come out of this meeting are you -- was this your -- the meeting to determine direction or is there a different open proceedings to give you guys input on this stuff?

MR. HOGAN: You want an opportunity to comment to the question of research?

MS. DONLAN: In written.

MR. SULLIVAN: Well, in written comments. And also an opportunity to do give some thought to what we're hearing today.

MR. HOGAN: Okay.

We don't have a process set up. But I will say our record is always open. If you wanted to respond -- anybody who wants to provide written comments can go ahead and do it. I will bring it back to my supervisors that you'd like thirty days to respond to any of those.

Is that fair?

MR. MC DAVITT: Bill McDavitt.

Now what's the turn-around time for today's meeting, summary meeting minutes.

MR. HOGAN: I think it's ten days.

Mr. Court Reporter, is it ten-day turn-around on transcripts?

COURT REPORTER: Yes.

MR. HOGAN: Okay.

MR. MC DAVITT: Thank you.

MS. DONLAN: Does that mean that we would have an opportunity to also -- I mean right now we're not going into the most detail. If we were going to write comments we might -- .

Are you saying the company would respond and then you guys would consider them?

MR. HOGAN: What I'm hearing is that there is an interest in First Light wanting to provide a response to these meetings. What my impression was was -- or what I said was I can bring the idea of a comment period back to my supervisors. I may be able to get an answer for you at lunch. I don't know.

If we created a comment period what I was thinking was it would be the same time period for everyone.

MS. DONLAN: Okay.

MR. HOGAN: What I think I'm hearing from Andrea is that you want to be able to respond to the comments. So thirty days for FirstLight and sixty days for stakeholders. And I don't think that would happen.

MR. SULLIVAN: So again, just so that -- where my question was too is we're not suggesting a process. We were curious as to what it was so it informs how we interact today.

MR. HOGAN: Okay.

MR. SULLIVAN: So what we'd like to do is -- Tom Sullivan, Gomez and Sullivan.

So we weren't asking for a specific process, you know, because one of the things that we're also concerned about is just, you know, the we're also going through the process. So what we'd like to do, if we could, is just take ten minutes, a caucus, so we could -- for ten minutes -- just so that we can talk and make sure that we're giving you what you need today. And FirstLight needs to talk among themselves a little bit. So if that would be okay, that's what we would like to do.

MR. HOGAN: I think that's fair.

What I would like, to give you a little bit of -- because I haven't done this. What I'm hoping to get from FirstLight today -- so you can caucus about it -- is if you see -- if you're hearing recommendations from stakeholders that cause you heartburn or you see clear schedule conflicts or things that just won't work, I'd like to hear -- I'd like to be made aware of those, please, that you know for sure. Okay? And share them in the room; maybe we can work something out.

But the intent today is not to come up with a consensus of how we're going to move forward. The intent is to inform the Commission as to what the stakeholders'

concerns are so that we can make an informed decision on how we are going to move forward. Okay? I don't have the authority to come in here and say, 'Let's do that.' Okay?

John.

MR. WARNER: Okay. John Warner, Fish and Wildlife Service.

So two points there. One is, just so everyone in the room -- because not everybody's familiar -- that this will go on the FERC record so if you say something and all you're going to write is the same thing, then it's going to be -- FERC has it and it's on the record. You don't need to repeat that --

MR. HOGAN: That's true.

MR. WARNER: -- to get it on the record.

MR. HOGAN: Yeah.

MR. WARNER: I mean you can, but you don't need to.

And the other is I think if there are going to be studies done this year, in 2014 -- you know, I'm all about making sure that there's communication. But if we push these -- if we push the decision of the Commission too late, then we're going to be confronted with study plan reviews that are going to -- they're going to want to rush them because they're really going to get in the field. And that's going to be problematic on that end.

So to the extent that we can get everything out and again just make -- at least if there's consensus in the room and the applicant doesn't disagree with the consensus in the room, I would assume that -- I don't know what I assume the Commission's going to do. But I would think that would go a long way to setting the recommended schedule.

MR. HOGAN: I will bring back the consensus for sure. And whether there's a dispute, you know, if I agree with it, I'll support it. But I can't agree that -- as history will show -- demonstrate, I can't promise, you know, -- .

All right. Let's go ahead and take a ten-minute caucus.

(Recess.)

MR. HOGAN: Before we move on with water quality, let me go back to some of your comments about -- from FirstLight. -- the water quality studies that -- just delaying it as written is going to be probably be appropriate. I just want to make sure that folks don't see any need for a change in methodologies for that study.

(No response.)

MR. HOGAN: Okay.

Tom, you wanted to bring us...

MR. SULLIVAN: Tom Sullivan, Gomez and Sullivan.

So we wanted to caucus just to be clear how, you know, what that interaction we thought you folks were looking for today and what kind of direction we needed to go. And so what I would like to do is just kind of -- we've covered two studies so far. We've covered 3.1.2 study; we've covered water quality. And I can kind of give you our general reaction.

I think the comment on ice is something that we do need to consider for 3.1.2. There was a lot of discussion about whether that had anything to do with transect selection. It is not clear to us it has anything to do with transect selection.

How we accommodate ice in the study is something we need to go back and kind of think about a little bit. It is -- you know, for us it was like a new issue today. So we need to go back and give some thought to that.

So that's where we are on ice.

On water quality, we're in agreement that we think the study should be deferred until 2015. There was a discussion about performing tasks or sub-tasks that you could, you know, do them earlier. And I think again that's a case by case decision on the studies.

But I think in this case there are some sub-tasks that we could do in 2014. We can report on the

progress of those sub-tasks in the interim study report at the end of the year.

But what we don't want to have happen is a series of smaller deliverables happening. So right now each of the studies -- like the water quality study -- was a report. The deliverable was a report, and it had several sections. We don't want to turn that into different deliverables.

One is it generates a lot more work. The second thing is is that it ends up with the potential for information being taken out of context. And so we want to avoid both of those things.

So, you know, like I say, the caucus was more about how we were going to interact. And we wanted to get your feedback on the first two studies.

MR. HOGAN: Regarding the deliverables issues, I think our expectation is that, you know, the ISR -- the Initial Study Report -- is a progress report to check in and let us know what you've completed and what you haven't and if you've deviated from the study methodologies in any way or if you had any variances.

So I don't think from an official perspective we would be looking for a summary report of, in that case, a literature review; just tell us how you've been implementing the study plan, which was the intent of the regs. And as

long as we meet 5.15...

Any feedback from the group?

(No response.)

MR. HOGAN: Okay.

The next item on the agenda was study 3.3.1, Conduct Instream Flow Habitat Assessments in the Bypass Reach and below Cabot Station. Does that study have any influence in any way by Vermont Yankee's decommissioning?

MS. DONLAN: No.

MR. SULLIVAN: No.

MR. MC DAVITT: I think it should go forward.

MR. HOGAN: Okay.

Does FirstLight have any concerns with that?

MR. HOWARD: It'll be great.

MR. HOGAN: Okay.

The next item, 3.3.2, Evaluate Upstream and Downstream Passage of Adult American Shad.

MR. WAMSER: I believe this one has a big potential to be influenced and needs to be delayed.

MR. HOGAN: Delayed to 2015?

MR. WAMSER: Yes.

MR. HOGAN: Andrea.

MS. DONLAN: This is a study that task one was review existing methods and task two was come up with a study design. I'm going to throw it out there that some of

these could actually happen in 2014.

But I agree, the actual study..

MR. HOGAN: Tasks one and two, 2014; field work 2015.

MS. TOMICHEK: Actually -- This is Chris Tomichek.

Task one isn't methods. Task one is to actually go back and look at existing data to figure out if something is there that we can use to set the study. That's a little different than just reviewing methods. It's real data that the lab has collected over the last ten years.

MS. DONLAN: Okay. I was picturing it like a literature review, something that --

MS. TOMICHEK: No. We're actually looking at real data. We're looking at the data that Ted and Ken collected, the whole river study, TransCanada, or else we're looking at data that Connie Lab has looked at. And with Cabot Ladder for, you know, several years to see how we can use that to design a better study.

MS. DONLAN: Okay.

MS. TOMICHEK: So I agree, if this is going to be put off to '15, it would be good to have a little more time to really get into that data and do a good review.

MS. DONLAN: Okay.

MR. RAGNESE: Do I understand you're talking

about the work that's been -- that the Columbia work and everything, that tracking would have been done in the last couple of years?

MS. TOMICHEK: Yes.

MR. DEVINE: Tasks one and two would continue in 2014; one or two studies here in 2015? Is that...?

MS. TOMICHEK: That would be -- make the most sense to me, yes. We just got the data two weeks ago from Ted, so it would be good to have a little more time to process it. And we can always get, you know, get something ready for 2015, which is when we're going to do the study.

MR. HOGAN: I think we're all on the same page, then.

3.3.3, Evaluate Downstream --

MR. MC DAVITT: Just to back-up...?

MR. HOGAN: Sure.

MR. MC DAVITT: If we're not reducing mortality then -- if mortality estimates cannot be assessed giving motion-sensing tags in year one then FirstLight will consider ID tags determining mortality at Cabot Station and Station One in year two.

Have you given -- We agree this should be delayed and not -- this isn't for 2016? At the end of 2015 they would make this decision?

MR. HOGAN: If the Commission approves it as

written, that's correct.

MR. MC DAVITT: And as far as process goes?

MR. HOGAN: There's no -- A delay in the first year of the study does not change the information needs that the Commission has determined that it needs for its purposes. And if it means that studies have to be conducted in 2016, that's what will happen.

Andrea.

MS. DONLAN: Just a question for the fisheries folks.

Is the setting up of the tag readers and the receivers and everything enough of a -- it'd be nice to have more time to fiddle with it and get it right so that year one of the study is really good, or does it -- is it probably not a big deal?

MR. SPRANKLE: (Inaudible.)

Ken Sprankle, Fish and Wildlife Service.

We thought -- We had a meeting a couple weeks ago on this. It's the providing of the data.

One of the outcomes from our preliminary analyses of our data on the whole river study was that, you know -- you know, recommendations would be -- would do a better job in terms of determining tag detection ranges and things that we, quite frankly, just didn't contemplate to do sufficiently early.

So anyways, to your point, for the radio tag studies, yeah, I think there's value in having more time to do testing and verification. Just -- You can't really set a lot of this gear up until you get immediately before the season starts and you're under a time crunch and there's poor conditions or potentially something.

MR. DEVINE: Acoustic testing that was planned for 3.3.3 would move to August 2015.

Sorry, John Devine, HDR/FERC.

This has a parallel study over in 3.3.3. I guess we'll get to that. The question then, the hydro-acoustic setup and testing that was originally planned for August 2014 under this delay would move to August 2015, correct?

MR. WARNER: Correct.

MR. DEVINE: The hydro-acoustics with their -- ?

MR. WARNER: Yeah. That would be delayed as well.

MR. HOGAN: John's following my instructions. I said I want to be very careful to pay attention to inter-related studies and how one may affect another. But I do want to go through one at a time and maybe make those connections.

Back to the design of the studies: What I'm

hearing is it would be nice to have more time to do 'x,' 'y,' and 'z.'

I want to proceed as though we have the same amount of time as we had for the study plan determination. Those issues that are under the previous schedule for the study plan determinations, those issues that have been filed with the Commission, recommendations for study mods that will move forward are not really the topic for this meeting. I want to concentrate on effects of VY.

Now if we end up with more time as a result of effects of the VY closure and shifts in the schedule because of that, how you choose to utilize that time I'll leave to the First Light and stakeholders. But we're going to weigh in on what's on our record in our study plan determination. I'm not re-opening a debate of those studies that have been filed and comments that are there on our record now. Okay?

Well, 3.3.3 I heard -- we just heard that it's appropriate because it's linked with 3.3.2. Also delay field work for 2015.

Is that true?

MR. SULLIVAN: Yes.

MS. DONLAN: Yes.

MR. HOGAN: Is this one that has some desktop task work that could occur in 2014?

(No response.)

MR. HOGAN: Any other comments on 3.3.3?

(No response.)

MR. HOGAN: Okay.

3.3.4, Evaluate Upstream Passage of American Eel at the Turners Falls Project.

MR. HOGAN: Delay it? Go ahead?

MS. DONLAN: Yes.

MR. WAMSER: Mike Wamser, yes we can take care of that.

MR. SLATER: Just a little -- Yeah. It's going to take probably more than one year for them to figure out where these eels are.

And I think from the folks we discussed it with, the effects of temperature would be if there's a concentration of temperature differential, which you're not going to see at Turners Falls, out of Vernon quite possibly could be an issue. But the water's well-mixed by the time they get down to Turners Falls Dam.

So if there's an elevation of temperatures that are uniform across the dam and for the study is where the eels congregate. And that's related to the flow as long as the temperature's the same.

MR. HOGAN: Okay. So there's no interest on migration timing or anything?

MR. SLATER: Not at that point, that far

downstream. And their coming from the ocean, so.

MR. WARNER: And based on all years of study so far at Holy Oak or on the Merrimac River, you know, there's a range of them. They'll migrate upstream. You operate those facilities and you have facilities for passage of the eels about that period, or they will be all over the place.

I mean it's really -- There's no -- The patterns and water, you know, closure and, you know -- so I don't think you're going to solve, you know, some narrow window of operations in a two-year study. You know, it will be broader and longer than that. And I think you're aiming at location, not timing.

MR. HOGAN: Okay. Everybody is okay with keeping it on-schedule for 2014?

(No response.)

MR. HOGAN: Okay.

Any concerns about '15?

(No response.)

MR. HOGAN: Okay.

3.3.5, Evaluate Downstream Passage of American Eel. Any temperature-dependence here?

MS. GRADER: I think there was a consensus that -- Melissa Grader, Fish and Wildlife Service -- that the telemetry portion should be delayed, but other aspects, like the turbine entrainment, could proceed. Turbine

entrainments will survive that -- .

Any other Agency people or stakeholders speak up on...

MR. SLATER: Well, I think the other issues was -- again, this is going to be a bigger issue up at Vernon. But the idea here is where you're going to be using the same eels. They're going to come through Vernon and then move down to Turners.

And if you've got everything set up in one year, if you delay the study up at Vernon and do it down at Turners, you end up doubling your effort. You've got to find a bunch of eels two years in a row rather than one year and set up the study at two different facilities two different years. I think that was also an issue.

Just we know we're going to delay it out at Vernon, so might as well delay it here since there are links.

MS. GRADER: Correct, yeah.

MR. HOGAN: Did I hear -- I heard splitting, and then I heard delay.

MR. SLATER: Delay the radio telemetry portion, certainly.

MS. GRADER: He said that was another justification for delaying.

MR. SLATER: Yeah.

MS. GRADER: At the Turners was because at the beginning additional eels directly from upstream during their study.

MR. HOGAN: And is the entrainment portion dependent on radio telemetry at all?

(No response.)

MR. HOGAN: No?

MS. GRADER: Hydro-acoustics at that.

MR. RAGNESE: I mean, our perspective is quite similar to what Caleb stated. You know, we don't work closely with -- so '15, it makes sense on the radio telemetry. But we also think that to make a reasonable conclusion out of the entrainment and mortality and fish and liable and logical impacts, you really have to wait until both of those are done.

So we're saying we should do them in the same year. At least the final part of it. Or at least have the flexibility to do that.

So I'm not sure if there is a question because we agree on the radio telemetry side. It makes sense to definitely delay that. But we're actually suggesting that they both go together. But that doesn't really impact the transit side up doesn't impact downstream.

MR. HOGAN: What I got is consider moving forward with the turbine entrainment paths of the study and

delaying radio telemetry until 2015.

John.

MR. PUGH: John Pugh.

It does seem that any of these impact studies or direct turbine mortality studies are not affected by VY being closed down necessarily. And it's certainly -- once you go out to do those studies, the time and the temperature of the water when you do them is going to depend upon how you can get fish.

So in terms of both juvenile shad and eels, there is some concern that a significant number of fish are large enough to do these studies. And that someone will split these so that 2014 has done as much as possible for the turbine mortality of -- adequate study, that reduces the need for fish in 2015.

And eels in particular are going to be very difficult. There's a lot of eels there to use in these studies.

So the more we can get done over a number of years rather than trying to compressed it all in one year.

MS. TOMICHEK: Chris Tomichek.

I agree with you with the eels, John. And I think it's good to do them next year because that way we'll need less thereafter. It makes sense.

The juvenile shad, though, I think we need to

hold off because part of that whole turbine mortality study was we were going to work with Ken to grow the shad juveniles large enough -- along with TransCanada -- So we probably won't have them next year; it will probably be the year after unless everybody's going to, you know -- because part of that is to grow them out for radio telemetry, too.

MR. PUGH: Right.

MS. TOMICHEK: So I guess I would propose to go ahead with ID tagging for the turbine mortality for the eels next year, but not with the juveniles. Hold that off to 2015.

MR. PUGH: So is it not possible to grow juvenile shad for 2014?

MS. TOMICHEK: Well, if we're going to grow them up to do radio telemetry and turbine mortality, you know, we're going to just double our effort if we have to do one one year and one the other year.

UNIDENTIFIED PARTICIPANT: And I collected them from the wild, so.

MR. PUGH: But this will be the first time that they've tried to increase the size of the juveniles. And I just wondered how effective that would be, whether you'll have a smaller pool to pick and choose from because you're both selecting for, you know... Just the largest fish come to have holding tags; how many of those largest fish would

you be able to raise?

MR. SULLIVAN: This is what we did at Connie. We did the juvenile mortality studies.

MR. PUGH: Yes.

MR. SULLIVAN: Tom Sullivan, Gomez and Sullivan.

MR. PUGH: Some smaller fish were used because there weren't all that many large fish.

MR. SULLIVAN: That may be true. I mean that's more of a function of like, you know, the ability to grow fish, you know. But I think the point is, just from an efficiency perspective, you know, if we're going to grow a batch of fish for radio telemetry and for mortality studies it would be better just to do it one time, you know, type of thing. So... Eels are a little bit different.

MR. HOGAN: Is there a cost concern with that?

MR. SULLIVAN: I'm sorry, what?

MR. HOGAN: Is there a cost concern?

MR. SULLIVAN: Well, yeah. I mean you're basically -- you're incurring the cost twice by having to grow fish, you know, type of thing, and the labor and, you know, everything else that goes along with that.

MR. HOGAN: Now what I'm hearing is you think there's a benefit to moving forward with the entrainment on juvenile shad in 2014. FirstLight, you'd like to see it all

delayed. But I think everybody's okay with -- for juvenile shad, rather -- delaying that so that it's all occurring in 2015 with the passage studies. And that's the general consistency with the opinion that downstream American eel passage could move forward with -- in 2015.

MR. PUGH: The turbine mortality portion of it, not the --

MR. HOGAN: The turbine mortality --

MR. PUGH: -- in 2014, and the radio telemetry in 2015.

MR. HOGAN: For eels.

MR. PUGH: Eels.

MR. HOGAN: Any other -- Karl.

MR. MEYER: I just want to reiterate what Don's saying.

I think shad -- juvenile shad entrainment and the whole issue of shad are such a critical part of this re-licensing process that I think two years of making sure we have sufficient data and sufficient individuals grown to get good data out of this is very, very important.

MR. HOGAN: All right.

Study 3.3.6, Impact of Project Operation on Shad Spawning, Spawning Habitat and Egg Deposition in the Area of the Northfield Mountain and Turners Falls Projects.

MR. SLATER: This is Caleb Slater, Mass Fish

and Wildlife.

It's my opinion that this can go ahead. This is predominantly a flow study. It's about the impact of Cabot generation on spawning. I think there could be a small compounding effect of temperature. But the basic thrust of the study is project flows versus shad spawning.

MR. HOGAN: I have a question for you.

MR. SLATER: Uh-huh.

MR. HOGAN: Your requirements are looking at spawning habitats not only downstream of Cabot Station but also in the Turners Falls pool.

My understanding is that the VY discharge is not necessarily completely dissipated within the -- from the reservoir at Turners Falls. Is that true or not? It continues to mix downstream at Vernon.

MR. SLATER: For a small -- for a little ways, yeah, I believe that's the case, yeah.

MR. HOGAN: Would that influence spawning locations in Turners Falls pool?

MR. SLATER: But I think -- again, I think the major thrust of the study is the effect of project operations on the known spawning areas below the Cabot. While they're out there, we want to look for some other spawning areas to see if they are out there, but...

You bring up a good point. But I think our

feeling is reviewing them is the thrust of the study as far as known spawning areas or habitat in the flow.

MR. DEVINE: And the spawning temperature should not affect this?

MR. SLATER: Where they spawn? It's pretty -- certainly below Cabot is completely mixed. So if there's any effect it's going to be spread out.

MR. DEVINE: You say there isn't going to be any? They're not going to be homing in on temperature.

MR. HOGAN: If the temperature of the Connecticut is -- I'm not trying to be argumentative.

MR. SLATER: No.

MR. HOGAN: I was trying to find my way through it.

If the temperature of the Connecticut changes, the ambient temperature of the Connecticut changes, the other tributary influences downstream of Cabot, would those temperatures -- the change in the Connecticut and the temperature influences have a potential of changing spawning locations? I mean do shad hone in on spawning locations at all substrate and temperature, or is it just purely substrate and flow?

MR. SLATER: I don't know.

MR. WARNER: I think mostly they're going to hone it -- they're going to find locations, you know, in a

uniform environment; that they will spawn based on, you know, the physical characteristics of the habitat as well. You know, and if it's warmer they'll be -- they'll mature quicker; they'll spawn earlier, and conceivably spawn for a shorter period of time if that, you know, brings them an advantage, so it celebrates the whole process. But it wouldn't -- you know, I can't see how they would change location.

What I -- I'm not really familiar enough with temperature data below Vernon at the time of year the shad will spawn to know what the influence of VY is at, you know, a fairly moderate, you know, flow emission, you know. It's not summer low flow and it's not in winter. You know, so it's in a little bit high flow. So that I -- I don't have a good handle on that either, given that's occurred.

MS. GRADER: The most severe fish modeling theories -- I mean at station three it can be, depending on what ambient is at station seven, it can be up to five degrees warmer than ambient at station three. So that, you know, its all going to vary year to year, obviously.

So -- And what we do know from all the studies that were done in the '70s is that, you know, basically the warmer the water is the less the shad don't reach as far upstream, you know, because of the downstream after the spawning sooner, you know, farther downstream, and then

otherwise, where they're in cooler waters.

I agree that there is probably more of an issue in Turner's pool than downstream. But I guess I also -- I agree with John that it's probably more going to have to do with the timing of spawning than spawning location. I guess we don't really know for sure.

MR. HOGAN: And also potentially, just what you said, magnitude of spawning, in warm water something will spawn sooner, i.e., downstream further, whereas under the change that you are traditionally seeing them spawn, the magnitude may shift upstream.

MS. GRADER: Uh-huh. Yes.

MR. SPRANKLE: Ken Sprankle, Fish and Wildlife Service.

The preliminary data that we have for 2011 were that the fish, the radio-tagged fish that exited Turners Falls out of -- house rapidly proceeded upstream. Typically it was a day or two. So they rapidly proceeded upstream.

I mean, you know, experts, you know, have been talking about year to year variability and so forth. So we obviously -- we have discussed this. And I think we were -- what was our point of contention? That it was more habitat-based. We did have some discussion when we were talking about it here.

But I think, as Melissa points out, you know,

the terms -- the question about mixing conditions and so forth, I mean it's our best information is that, you know, it's approximately 26 miles downstream at that point. What's not there is a tailrace. I mean these are questions and, you know, we have all raised them before, you know, from that .6 up to the tailrace, that's where we don't know; we have more concerns about changes in water temperatures and the like.

So I guess that would be, you know, what I'd like to see down there.

MR. RAGNESE: I'm trying to think of what our version of this is. And I have at times looked up yours.

Are you identifying habitat with radio telemetry?

MR. SPRANKLE: Yes.

MR. RAGNESE: So you're tracking fish movement to identify the habitat?

MR. SPRANKLE: So that would be particularly important in the Turners pool.

MR. RAGNESE: And the other question is: Is there a temperature-monitoring component as well of that study?

MR. SLATER: Well, I'm sure they take the temperature when they find a spawning site.

MR. RAGNESE: I just have --

MR. SLATER: That's just additional information. That's not the major thrust of the study.

MR. RAGNESE: All right. Just asking the question, because that's important.

MR. HOGAN: Don.

MR. PUGH: One of the great components of identifying prime habitat is radio telemetry. Down below Turners we have previous information on where they have spawned historically as far as -- fifteen-twenty years ago. The other way to identify it would be simply be boat surveys, traveling up and down the river and looking for the actual spawning to take place.

We have very little information or no information perhaps about spawning in the Turners pool. And so in addition to -- and so that leaves out one of those important mechanisms right now about spawning habitat. We know where they are because we've studied this in the past from up above.

Radio telemetry will be important in identifying where shad are stopping and spawning. So I think that linking this with the radio telemetry study is --

MR. SLATER: Yeah. We hadn't discussed that.

I think that it will probably produce good information that could be gained by incurring the behavior of those radio-tagged fish as far as this project. I mean

you can't be certain how many of them will take part in spawning. But certainly some of them should. So perhaps it would be better to delay it and get the full slate of information on it rather than just a portion.

MR. RAGNESE: Plus we may see them go through our project.

(Laughter.)

MR. RAGNESE: And we'd like to do that.

MR. SLATER: And we've discussed coordination coming downstream.

MR. RAGNESE: Yes.

MR. SLATER: So we should discuss coordination going upstream. So maybe that just makes sense.

So I'd like to reconsider my previous statement.

(Laughter.)

MR. HOGAN: Katie, you had a comment just before John asked his question?

MS. KENNEDY: I think it's been covered.

MR. HOGAN: Okay.

So it sounds like because of the radio telemetry component for identifying spawning habitat.

MR. SLATER: And determining the age and when did --

MR. HOGAN: Yeah. This may be appropriate to

delay until 2015?

(No response.)

MR. HOGAN: FirstLight have any comments on that?

MR. WAMSER: Mark Wamser, Gomez and Sullivan.

I think the only caution I guess is when the telemetry work is being done, what is presumably in the spring time. And we're going to be searching for these spawning areas at the same time. So I don't know how the telemetry will necessarily inform the locations.

UNIDENTIFIED PARTICIPANT: (Speaking off mic.)

MR. WAMSER: Okay. I just didn't know how much of a lag in timing this would be. Okay.

MR. HOGAN: Andrea.

MS. DONLAN: Andrea Donlan, Connecticut River Watershed Council.

If we decided to delay this one then this does have a task one that's develop the study plan.

MR. HOGAN: The non-field components.

MS. DONLAN: Yeah.

MR. HOGAN: Any other comments regarding shad spawning?

MR. MC DAVITT: Bill McDavitt, NMFS.

I guess the task two would come in 2015, contamination of known spawning areas? Is that 2014 or '15?

MR. HOGAN: I think the idea was to move it all.

MR. MC DAVITT: Okay.

MR. HOGAN: And I think there's some value in having a data set from the same year around the studies, you know, because in my mind it would be, well, if Turners falls downstream in 2014 and then do Turners pool 2015, I think having one data set in a given year has a benefit also.

MR. PUGH: It saves money because you don't have to tag fish twice.

MR. HOGAN: Well, downstream you said we know where the sites are; we wouldn't have to tag the fish.

MR. PUGH: No, we know where the sites were identified fifteen or twenty years ago.

MR. HOGAN: It does say twenty years.

MR. DEVINE: So the meeting that was proposed to be held in February-March 2014 to reach consensus on field study locations, is that... because you don't have more time to look at the data, or does still that study schedule still hold?

MS. TOMICHEK: We're going to put it off for a year, it might be -- might want to set a little more time to kind of -- a lot of the time figuring out how we're going to manipulate the project and the operations while we're doing the studies.

MR. DEVINE: It does seem like that potentially could have been -- You were kind of forced into that time frame in order to allow --

MS. TOMICHEK: Right.

MR. DEVINE: It could be the 2014 as the -- that gets relaxed a little bit, too, then.

MS. TOMICHEK: Right.

MR. DEVINE: And rescheduled.

(Pause.)

MR. HOGAN: Okay.

Study 3.3.7, Fish Entrainment and Turbine Passage Mortality Study. It sounds like from the previous discussion that the previous discussion holds that you would continue forward in 2014 or is there a reason this would need to be delayed?

MS. TOMICHEK: Chris Tomichek.

MR. HOGAN: Chris.

MS. TOMICHEK: It probably needs to be delayed because to do the entrainment study we're going to be doing it gives the turbine mortality, the radio telemetry, all the stuff that we just delayed, we're going to put that as part of the component of this entrainment study. So I think it almost follows it has to be delayed if we're not going to have the data.

MR. HOGAN: Because of the other studies?

MS. TOMICHEK: Correct.

MR. HOGAN: Andrea.

MS. DONLAN: Task one is a desktop analysis. I don't think it necessarily informs the task two or three. Do you feel like it does? I don't know if it matters when it happens, whether it gets done before or after. Or do you think it would be good to have it done in 2014 still?

MS. TOMICHEK: We'll talk -- .

MR. HOGAN: Chris, which studies did you say were interrelated?

MS. TOMICHEK: The turbine mortality studies. That's where we're getting a lot of the data for the entrainment for the eels, the turbine mortalities, and the duval shad turbine mortality studies will be a component of this entrainment work.

MR. SLATER: If there's any balloon tag work, that could go forward. But what you're saying is you're going to use the routes of passage that you figure out from your radio telemetry study to apportion how many fish go through the entrainment versus bypassing?

MS. TOMICHEK: Right.

MR. SLATER: So you need that data.

MS. TOMICHEK: You need the data.

MR. SLATER: Is there any field work involved in this study with balloon tags or is this all just desktop?

MS. TOMICHEK: This particular 3.3.7 --
MR. SLATER: Yeah.
MS. TOMICHEK: -- is pretty much desktop.
MR. SLATER: Okay.
MS. TOMICHEK: Gathering, you know, data from the other fields of studies.
MR. SLATER: Got it.
MR. DEVINE: Well, we may just have to change the report timing for this. Okay? So that would be a change to 2015. It could be the entire study because it's informed by...
MS. TOMICHEK: But (inaudible).
MS. GRADER: So, like the residents, the ones there, the -- , I mean the residents. But no fielding data.
MS. TOMICHEK: Well, the -- we're going to use the fish assemblage study to inform us about the -- of fish.
MS. GRADER: Okay.
MR. DEVINE: We haven't got there yet.
MR. HOGAN: Okay.
We're going to jump ahead to the fish assemblage study. Is that one that -- if that's your reason for the resident fish is that the fish assemblage study needs to be delayed, the question is does the fish assemblage study need to be delayed in Turners Falls.
MR. SLATER: It goes back to coordination

issues. I think it could probably go forward down here, but it's certainly going to delay at Vernon where you saw, you know, that we couldn't get all the data in the same year.

MR. HOGAN: Okay.

All right. Back up to --

MR. MINOR: Ken? Tom Minor.

I didn't get it. Is it delayed or not?

MR. HOGAN: The recommendation is to delay it so that the data is -- the timing of the data collection is --

MR. MINOR: That's what I heard --

MR. HOGAN: -- concurrent with TransCanada's data collection.

MR. MINOR: -- but I didn't hear a firm choice of what was going to happen. Delay?

MR. HOGAN: Delay.

MR. MINOR: Thank you.

MR. HOGAN: And I heard general agreement on that.

And I think the reason for delay at Vernon -- or at least in Vernon pool for fish assemblage is outlined in the New Hampshire Fish and Game's comment letter about entrainment at VY. So even though we're not having that discussion today, it sounds like it's probably going to be the result tomorrow.

John Ragnese.

MR. RAGNESE: What they say? Not what we say.

(Laughter.)

MR. RAGNESE: Well, we would concur.

(Laughter.)

MR. HOGAN: All right.

Study 3.3.10, Assess Operational Impacts on Emergence of State-Listed Odonates in the Connecticut River.

MR. LEDDICK: Jesse Leddick with Division of Fisheries and Wildlife.

We thought that this study was primarily a water fluctuation study and it wasn't temperature. So we didn't have any concerns about going forward as planned.

MR. HOGAN: So water emergence or anything is not...

MR. LEDDICK: It may affect the timing slightly. But I think the major issue again is water fluctuations, level.

MR. HOGAN: Good enough.

MR. ETTEMA: So if water level fluctuations differ throughout the season and we shifted the timing of emergence now because we no longer have, you know, an open reservoir, we have a frozen reservoir, it shifts the insect metabolism, that kind of things, in development. And I don't really have a good sense for that. But is that a

concern that we need to discuss here?

I mean what sort of timing shift are we expecting? Is it going to possible to be a week?

MR. HOGAN: I don't think you're going to --

MR. LEDDICK: I don't know if we can answer the question.

MR. ETTEMA: I don't either. I'm just throwing it out there.

MR. LEDDICK: I think we were thinking about similar issues. And I think we came back to the fact that we just don't know the answer. I guess again we could delay it; we just didn't say it.

MR. HOGAN: My primary concern is -- we don't have an opinion whether it would occur next year or in 2015. Our concern is making sure that the data we collect in any given year is appropriate data. So if you feel that there's an uncertainty and you may think that we're going to collect inappropriate data, I think the recommendation should err on the conservative side. If you think that there's no issue, that's...

MR. HAZELTON: I think I'd like a bit of modifier stance when we come to make study here.

MR. HOGAN: Okay. 2015?

Are you guys...?

MR. WAMSER: Mark Wamser with Gomez and

Sullivan.

We had it 2014. But I guess 2015 it's going to be. I'm just not sure in the end -- because you aren't going to have a condition for licensing in... Okay. Great. You may.

I guess we're fine with delaying.

MR. HOGAN: And I think what Nick was alluding to is that if emergence is delayed by -- let's say it's two weeks or a month, does that push it into a different hydrologic cycle under the -- compared to the current condition, yield related stream flows.

MR. WAMSER: Right.

MR. HOGAN: And is that question an issue or not.

And if you can say that between March and June the reservoir fluctuation is the same regardless of in-flow, then that may be an important -- you know, information to say, well, it really may not matter. But if your reservoir fluctuations do change because of the hydrologic change in run-off or whatever it may be, maybe we need to consider that.

MR. WAMSER: I understand what you're saying. I don't know what the answer is.

But this goes across the board for all these studies. We don't want to do these studies more than once.

So if there is a concern we would rather delay it. But that goes for all these studies we're talking about today. I'd rather take a conservative approach. So if that's what we defer, then we're fine with that.

MR. HOGAN: Okay. Fine.

(Pause.)

MR. HOGAN: Okay. So we already discussed fish assemblage. That came out with TransCanada's presumed 2015 implementation.

MR. RAGNESE: The assemblage? I mean -- I didn't hear the numbers that you're referring to.

MR. HOGAN: Fish assemblage. I said we already discussed it and we were linking that with the presumed delay of that for TransCanada.

MR. RAGNESE: Got you.

MR. HOGAN: So just for curiosity, in the event that it's determined tomorrow that TransCanada's fish assemblage shouldn't be delayed, this one's -- the FirstLight can go forward also?

UNIDENTIFIED PARTICIPANT: Yeah. In the unlikely --

(Laughter.)

MR. RAGNESE: Are you going to give us a determination tomorrow?

MR. HOGAN: The recommendation.

You may be able to at your own risk.

MR. RAGNESE: Thank you.

MR. HOGAN: We move the recommendation --

MR. RAGNESE: I will defer to Mark Wamser's comment: We do not want to do things twice.

MR. HOGAN: All right.

MR. RAGNESE: Or even once.

(Laughter.)

MR. HOGAN: Study 3.3.12, Evaluate Frequency and Impact of Emergency Water Control Gate Discharge Events and Bypass Flume Events on Shortnose Sturgeon Spawning and Rearing Habitat in the Tailrace and Downstream from Cabot Station.

It's probably one of the longest study titles I've ever seen.

(Laughter.)

MR. HOGAN: Is there any reason that this study should be delayed?

MR. MC DAVITT: Bill McDavitt, NMES.

We saw that as part of the flow trip event, with stream temperatures, certain spawning.

MR. HOGAN: Okay.

Karl.

MR. MEYER: Karl Meyer.

Temperature, if you look in chapter three of

Boyd Canard's book, A Life History of Biology of Sturgeon, in certain years temperature and flow can be a determinant of whether shad actually -- I mean sturgeon actually spawn. So I would think it would be confounding to sort of do this in a year when Vermont Yankee was operating and then have the rest of... So I would say delay.

MS. TOMICHEK: This is Chris Tomichek.

This has nothing to do with shad spawning. This study --

MR. MEYER: I'm sorry, I made a mistake.

MS. TOMICHEK: Oh, sorry.

MR. MEYER: I'm sorry, I mis-identified.

But -- and there's also -- I just read a paper, Erica Parker and Canard, that temperature may affect larval dispersal at depth. At varying peaks the larvae may disperse farther downstream. It may affect predation, et cetera.

MR. MC DAVITT: This is Bill McDavitt with NMES.

I think the first year objectives are almost entirely operational. It's sort of a question of when are these things released. Essentially what we ask is, you know, please tell us when you might do emergency control-gate release.

And the third one, it's really more of a set of

transport velocities and depths. When the physical -- you know, when you do have that release, what is the physical change depth velocity and entrainment, et cetera.

It's not -- I mean it could be all of these -- well, first of all, you don't know if it assumes sturgeon spawn early that year; they could spawn late; they could even not spawn at all. It's really -- the question really goes to just when does the emergency gate -- .

MR. HOGAN: Yeah. It's a physical study. They're not actually going out and looking at biological effects on the species as a result of the operations.

Well, they're not going out and sampling sturgeon.

UNIDENTIFIED PARTICIPANT: Right. Right.

MR. HOGAN: They're looking at the habitat effects.

MS. TOMICHEK: But I think we're actually avoiding the spawning period when we do this study. We don't want to do it during the spawning period. We want to do it some other time. It really has nothing to do with - - .

MS. GRADER: It doesn't mean that temperature doesn't affect that sturgeon; for the purposes of this study it's to evaluate just the physical habitat features --

MS. TOMICHEK: Right.

MR. HOGAN: Yeah. If sturgeon were there spawning, what would that mean?

MR. MEYER: Okay. So they're not -- definitely not going to occur during the spawning cycle. But you are going to look at history of when -- we do have some sort of record of when these have occurred. Okay. Thank you for the clarification.

MR. HOGAN: So it sounds like that recommendation from the room is going ahead and keep that on track for 2014.

MR. MEYER: Correct.

MR. HOGAN: Okay. The proposed schedule.

MR. MEYER: Yes.

MR. HOGAN: Okay.

All right. 3.3.13, Impacts of the Turners Falls Project and Northfield Mountain Project on Littoral Zone Fish Habitat and Spawning Habitat.

MR. WARNER: I guess I'll ask Chris, I'm pretty sure this is what we advanced for -- there were various study ideas on this. And I don't have a comment on it; I don't remember.

(Laughter.)

MR. WARNER: This is a physical assessment on the impacts of water level fluctuations on littoral zones and what the communities experienced. And since it's only

water -- there's no fish component to this, no fish sampling component.

MS. KENNEDY: Well, there's primate -- and there's -- .

MR. HOGAN: In this way it's a similar relationship would be to the study where if the spawning window is shifted and the natural hydrology is being -- a different stage in the hydrologic cycle --

MR. WARNER: Well, that's why I asked the question because I thought we had asked for the physical portion. And I couldn't remember whether we had the fish portion in there.

MS. DONLAN: That's the next one, John. But thank you. Aquatic habitat mapping.

MR. WARNER: Yeah, well...

MS. DONLAN: It was one we worked out.

MR. WARNER: Yeah, if that's the case then, yeah, then you have to do it. Otherwise you'd -- you have to understand why the proper -- .

MR. HOGAN: 2015 for 3.3.13.

(Pause.)

MR. HOGAN: Does anybody need a break? Are we good?

MS. DONLAN: This one does have a literature review task. 3.3.13 has a -- task one is a literature

review that could proceed.

MR. SLATER: 3.3.14 has the purely physical mapping of the... That might actually help get that out of the way the first year; the second year you'll know where the fish --

MS. DONLAN: Then we already have everything about those.

MR. DEVINE: On the previous one, it was okay to -- I don't know if you're okay with task one proceeding in 2014.

MR. HOGAN: 3.3.14 continues up as proposed in 2014. Is that what I heard?

MS. WILL: Is there -- Was there water quality data associated with that?

MR. HOGAN: There's water quality data associated with most of them.

MS. WILL: No, I mean for that particular study.

MR. HOGAN: Okay. 3.3.15, Assessment of Adult Sea Lamprey Spawning Within the Turners Falls Project and Northfield Mountain Project Areas.

MR. PUGH: -- the potential temperature change essentially below Vernon, this should be delayed.

MR. HOGAN: Any concerns with that?

(No response.)

MR. HOGAN: 3.3.16, Habitat Assessment Surveys and Modeling of Suitable Habitat for State-Listed Mussel Species in the Connecticut River below Cabot Station.

MR. HAZELTON: Peter Hazelton, Mass Division of Fisheries. We propose that this be delayed to 2015 for field work. There is -- task one was to finalize a study plan, and that should proceed in 2014.

MR. WAMSER: Mark Wamser, Gomez and Sullivan.

Again, reiterating what I said earlier, we're fine delaying it. But this was linked with the in-stream flow study. So data collected as part of this is going to inform the in-stream flow study.

MR. HAZELTON: We don't want to delay in the in-stream flow study.

MR. WAMSER: And that's why I bring it up.

MR. HOGAN: Okay. So let's elaborate on the concern.

MR. HAZELTON: The concern is that temperature is a physical habitat and it affects mussel reproduction, the holding of larvae, and also timing of fishing -- . It may also affect movement and the ability to determine mussel densities and more important demographic variables that the division has requested be involved in the mussel survey.

So -- And we also understand that there has been some work at the way this was devised into a phase one

and phase two to look at a more qualitative approach for looking at mussel densities and distributions. We understand that that's been done already in some areas. And that's fine.

But in going back and assessing more quantitative habitat use of freshwater mussels, we think that that should be incorporated in here as where the temperature is not as variable.

MR. HOGAN: I'm not a mussel guy.

What kind of timeline for colonization are we looking at after a change in the temperature regime for mussel beds? I mean if habitats were to become more stable because of a change in water temperature, how long a period of time -- are we talking about a year or are we talking a decade?

MR. HAZELTON: As far as the colonization of a patch with large enough densities, significant establishment of a new patch, we're probably talking about a decade.

But as far as getting an estimate of mussel densities within a patch and the characteristics of that patch, that's immediate. The temperature is going on; mussels do respond to temperature and it informs their -- it drives their movement rates and their burrowing rates.

So I do believe that looking at changes in temperature is an important factor in determining what

mussel habitat, how mussel habitat is in the river. And so to measure those temperatures in a year that is -- that temperature is affected by fish -- would be inappropriate.

MR. HOGAN: Okay.

MR. WAMSER: Mark Wamser again.

Keep in mind that this study was all below Cabot. And I'm wondering by then if any temperature achieved at the mix by that point.

MR. HAZELTON: You're absolutely right. And I'm not certain about that. I don't think that we have that data.

MR. HOGAN: Yeah. And I think we're taking the approach that even though it may be mixed, it's still going to be quantitative. We're taking -- Now that's the conservative approach we're assuming.

Mark, can you elaborate on your concerns regarding the IFIM and how the data between the two studies interrelates?

MR. WAMSER: Well, I think what's been done already is in the bypass channel from Turners Falls Dam down to the Deerfield there's already been mussel studies done. So we know at least from that there's no state-listed species that were identified.

So the whole purpose here was -- this study was going to go from roughly the Deerfield downstream to find

out if there's any state-listed species. And then if we found state-listed species then perhaps that would be a location where we put a transect for an in-stream flow study or to look at water level fluctuations. That was the reason why. That's the link.

MR. HOGAN: Okay.

John.

MR. WARNER: I have a question.

I'm having trouble understanding how in the year after the VY goes offline, the spring after, that if you wait until then you'll actually gain anything because you won't see small mussels that are being spawned. They don't -- I mean I may be wrong, but I don't think they move real fast. So I can't imagine that we're going to find -- you know, they're all here and then they're all a couple miles downstream.

So it seems to me that if they exist and you do a thorough survey you'll find them. The path is whether or not they're small and they -- and those vary -- become more important are more -- their populations improve with VY offline if colder water is good. Or the reverse could be true: that the warmer water in the winter actually helped them. I mean you wouldn't really see that until years later. So it seems like -- and it's a state-listed species. It seems like you'd have the

opportunity to say we need to assess this now and make the best call we can to figure out what the operations are, you know, based on where they are now.

And once you change things, for whatever reasons, you're changing flows for sturgeon, you're going to change, you know, you may change flows for other fisheries and you may change -- and the water quality conditions would change. You need to go back and ask for some sort of post-follow-up survey to see that, you know, if the mussel populations have, you know, improved or not improved or what not.

I just don't see that we're going to have a lot of information to make a call that's going to inform the licensing decision in -- based on that.

MR. HAZELTON: You were right that in this study you would not be able to see any -- we wouldn't have any measure that we could get other than any physical characters of mussels that are actually in the demographic variables that are being measured are not the kind of general rates could be assessed and sex ratios could be assessed.

Temperature may or may not affect that. I think that our bigger concern here is that we've asked for temperatures to be incorporated as a physical variable and changes in temperature be incorporated over a peaking cycle

because that may be important to determining what persistent habitat is in this stretch of river.

MR. HOGAN: Let me ask you a question. What is the -- And this is for both. I'm trying to see if there's a solution here.

MR. HAZELTON: Yes.

MR. HOGAN: If the habitat surveys were conducted in 2014, to the extent that that information is needed for the IFIM, location of the mussels, identified transects gone and so forth, in 2015 could temperatures be taken on a peaking cycle at those sites to satisfy your needs?

MR. HAZELTON: That would be acceptable.

MR. HOGAN: Is that something that you guys -- to reach resolution of the concern -- could propose?

So in 2014 the mussel surveys are conducted as proposed.

MR. SULLIVAN: Yeah.

MR. HOGAN: With one variance, that there would be a follow-up in 2015 and collect temperature data over a peaking cycle at those sites.

MR. SULLIVAN: Logistically we could. But I think the questions on the table are different questions than the timing -- or maybe they're related to the timing. I mean I think some of the questions are -- we didn't have

an eye yet on the methodology for the IFIM study relative to mussels.

And so a number of the things I think that you've raised are things that are not necessarily in agreement, you know, type of things. So I mean that's almost like a separate question that we need you guys to evaluate. That has nothing to do with VY, per se.

MR. HOGAN: I'm going to ask for a caucus.

(Recess.)

MR. HOGAN: So as I was reminded just before we caucused, the temperature issue for the mussel surveys is the current item of dispute for consideration as a condition. So we recognize your issue and interest with temperature and incorporating it into data collection with the IFIM.

I don't want to discuss the need for that data. But what I also heard you say was that you didn't have a concern with the proposed data being collected in 2014 prior to the VY decommissioning to support the IFIM study, but you were interested in temperature data post-VY. Is that a fair assessment of...?

Okay. With that, I think we know what we need to know and we will weigh in on the temperature data issue in the study plan determination and recognize that if we think that it should all be shifted, we'll address it

appropriately. And if it doesn't need to be shifted or -- we will deal with it based on our knowledge of your concerns. If you want to elaborate in writing on that concern, please do so.

But if I've characterized it fairly here, then --

MR. SULLIVAN: Yes.

MR. HOGAN: All right.

Any other -- Tom?

MR. CHRISTOPHER: Sorry, unclear: Delay or no delay.

MR. HOGAN: Unclear. We don't know yet. Not determined.

MR. CHRISTOPHER: Not determined. All right. That's fine. That's fine.

MR. HOGAN: I think what we have is the information that we need to make a decision --

MR. CHRISTOPHER: Got that.

MR. HOGAN: -- in the study plan determination as to whether or not it should be delayed. And that's going to be influenced by our decision on the need for the temperature data.

MR. CHRISTOPHER: All right.

MR. HOGAN: Okay?

MR. CHRISTOPHER: Thank you.

MR. HOGAN: And it could be a combination of both.

I've got to make sure I write that down.

(Pause.)

MR. HOGAN: So study 3.3.17, Assess the Impacts of Project Operations of the Turners Falls Project and Northfield Mountain Project on Tributary and Backwater Area Access and Habitat.

Is that study okay to move forward in 2014?

(No response.)

MR. HOGAN: I don't hear any issues with that. So no delay is the recommendation. We're all set.

3.3.18, Impacts of the Turners Falls Canal Drawdown on Fish Migration and Aquatic Organisms.

Any concern with that continuing on in 2014?

(No response.)

MR. HOGAN: No?

(No response.)

3.3.19, Evaluate the Use of an Ultrasound Array to Facilitate Upstream Movement to Turners Falls Dam by Avoiding Cabot Station Tailrace.

MS. KENNEDY: This is Katie Kennedy, TNC.

I just had a question, to go back real quick to 3.3.17. Was there any water quality component of that one? Or is that just physical?

MS. TOMICHEK: Yes, screen and collect water quality information.

MS. KENNEDY: Within the tributaries? Is it linked to the overall water quality study?

MR. WAMSER: I think we -- This is Mark Wamser.

We do say collect spot measurements of water temperature, dissolved oxygen, turbidity, -- .

MR. WARNER: I guess I'll ask you the question. But I don't recall us asking for that specifically.

But the spot measurements and the day you happen to be out there doing physical measurements, they're going to tell us nothing. I mean it seems like you're going to be informed by the water quality study that's going to have continuous monitoring stations.

And if you're going to have continuous monitoring stations in a backwater area then you learn something; if you don't, you won't find anything.

We were looking at access mostly, I believe.

MR. HOGAN: Katie, do you have any further concerns?

MS. KENNEDY: I just know -- I think that there was some -- someone at some point had some concern about temperature of some of the backwater areas. Maybe it was for the TransCanada study. I can't remember.

Yes, Ken remember. Ken Sprankle remembers.

MR. SPRANKLE: I'll just speak up. That was Gabe Greece when we had our conversation, if you'll recall now.

MS. KENNEDY: Oh, right.

MR. SPRANKLE: Is that -- I mean --

MS. KENNEDY: Okay.

MR. SPRANKLE: It was for a set-back immediately across --

MS. KENNEDY: That's right.

MR. SPRANKLE -- from VY. So...

MS. KENNEDY: Okay.

MR. HOGAN: So 2014?

(No response.)

MR. HOGAN: Okay.

3.3.18 you said 2014.

3.3.19, Evaluate the Use of an Ultrasound Array to Facilitate Upstream Movement to Turners Falls Dam by --

MR. LEDDICK: Well, there aren't going to be any shad with radio tags.

MR. HOGAN: Correct.

MR. LEDDICK: So I don't think we want to go ahead with that one either.

MR. HOGAN: 2015?

MR. LEDDICK: 2015.

UNIDENTIFIED PARTICIPANT: No, it's more like

'16.

UNIDENTIFIED PARTICIPANT: Yeah.

MR. HOGAN: '16. Oh, it's the year after...

UNIDENTIFIED PARTICIPANT: It's scheduled for the second year of the radio tagging study.

MR. HOGAN: So delay.

UNIDENTIFIED PARTICIPANT: Yes.

MR. HOGAN: All right.

4.2.3, Hydraulic Study of Turners Falls Power Canal. Now this was a request -- a study requested by Karl Meyer.

MR. MEYER: Well, first of all, it's nice to be on the same page with FERC for something here. I look at it and in my paranoid head I thought, 'They're setting me up.'

(Laughter.)

MR. MEYER: I would like to hear from the agencies and the non-profits about whether -- I know nobody wants to take the risk of sending the migratory fish of the United States into the Turners Falls Canal if there's a different place for the next twenty or thirty years. And to know what happens in that canal under certain flow conditions is critically important, if that's even still on the table.

So I'd like to know what U.S. Fish and Wildlife Service perhaps thinks about the impacts of Yankee on the

study going forward as a hydraulic study in 2014 or 2015, if that's an okay question to put out there. And John and...

MR. HOGAN: I want to ask Karl a question because I think, you know, the agency didn't request this study. But, you know, it is a study request that we have to deal with and we are going to address the request. But I do have some questions for you about the study, the hydraulic study and how it may be influenced by Vermont Yankee's decommissioning or not.

Do you see, as a -- I mean my understanding is you're looking for, with the study request, you know, what are potential barriers of migration within the power canal for shad migration upstream. I believe there was a component of the telemetry study, you also requested that shad be tagged in the power canal. And I believe that was consistent with Fish and Wildlife Service's request and done time-limited as well.

So in your opinion, for your study request is it appropriate to delay the study request to utilize the telemetry data if we were to approve it, or, you know, can the hydraulic analysis go forward without the telemetry data?

MR. MEYER: I hear what you're saying. And I think it's correct that the two are linked because clearly the canal is going to be influenced by Vermont Yankee.

Anybody who's ever seen the habitat has seen the little part way that goes through there and then, you know, that sort of large lake back there. That's going to have a lot of bearing on decisions that are made going forward.

So I would recommend taking hydraulic also.

MR. HOGAN: Anybody else have any response to that?

Andrea?

MS. DONLAN: Andrea Donlan, Connecticut River Watershed Council.

I'm a little confused because I thought with a hydraulic study of the river, FERC, you already ruled on that study plan determination from September, right? So is this study still on the table, or is it only any temperature aspect is still on the table?

Haven't you already determined that a hydraulic study in the canal is not warranted?

MR. HOGAN: We have not determined that.

MS. DONLAN: I'm sorry?

MR. HOGAN: We have not determined that.

MS. DONLAN: You have not. Okay.

And I guess, Karl, you said you wanted to hear from non-profits about hydraulic study in general or the temperature aspect of it?

MR. MEYER: Yeah.

Mostly I was interested in, you know, Ken or John's take on it. But it is clearly linked to tagging studies and how fish move through there or do not move through there. And I know that some of Ken's studies, you know, have some information about the delays, which are rather severe in that canal. And we don't know what happens to those in the canal. So that's why I would recommend sort of moving VY off the table and sort of linking them or saying that yea, not have that influence as we go forward with them.

MR. HOGAN: Andrea, the hydraulic signature -- bypass stream consistently up from Cabot Station to the dam or to request for hydraulics in that area. And that was separate from the power canal.

MS. DONLAN: I guess I'll add that the Watershed Council had similarly brought up the issue and FirstLight's response was, if I remember correctly, that a hydraulic study in the canal is not warranted because we always keep the water level in the canal at the same level. So I was trying to understand that because, yes, the water level might be the same but the velocity of the water going through the canal varies.

But then I think in talking to Fish and Wildlife staff, they said that there's already been some sort of a study done that would answer some of those

questions.

Is that true?

MR. HOGAN: FirstLight did a hydraulic study of the gatehouse and maybe other areas.

MS. DONLAN: But the entire -- the canal, other transects done in a previous -- were previously studied that looked at some of the hydraulics?

MR. FRANKEL: This is Ken Frankel, Fish and Wildlife Service.

Bob, the study that you have shared some preliminary result was focused in the gatehouse area.

MR. SEIVA: Yeah. That's what I think Ken was referring to, yeah.

MS. DONLAN: Those are sort of some key areas within the canal that people care about that there's enough of an understanding about the hydraulics.

MR. HOGAN: Right now that is the study request that's in dispute. FirstLight's not proposing it. It has been requested. We'll weigh on its appropriateness.

I just wanted to know, if we weigh in in favor of it, was the -- appropriate or should it go forward. That's the question I wanted answered.

MS. DONLAN: Okay.

MR. HOGAN: I want to treat all studies equally. I don't want to give any indication at these

meetings that, 'Oh, we're not going to approve that one,' or 'We are going to approve that one,' so we discuss it or not discuss it.

MS. DONLAN: Okay.

MR. HOGAN: All studies that are on the table for determination are intended to be discussed.

UNIDENTIFIED PARTICIPANT: I just wanted to add that it was co-sponsoring with the FERC. It's on the table for FERC. So we're partnering.

MR. HOGAN: That was our last study. And the summary of that one, it sounded like because the board may approve its appropriate to delay it to 2015 because of the -- . So the next item on the agenda, the meeting summary. I've asked John Devine to provide that, unless you guys want to skip that part for -- to speed things up.

MR. DEVINE: John Devine, FERC.

Starting off with 3.2.1, Water Quality Monitoring Study, that was recommended delay the field work to 2015. The desktop could move forward. Field work -- Desktop would move forward. So the field work was delayed to 2015, and some desktop work would move forward.

Any difference on that?

(No response.)

MR. DEVINE: Okay.

3.3.1, study 3.3.1, Conduct Instream Flow

Habitat Assessments in the Bypass Reach and below Cabot Station, no change to that schedule.

(Response off mic)

MR. DEVINE: Unless -- Yes, something with mussels.

3.3.2 --

UNIDENTIFIED PARTICIPANT: Actually, looking after it. So dependent on --

MR. DEVINE: 3.3.2, Evaluate Upstream and Downstream Passage of Adult American Shad. Tasks one and two could proceed in 2014; task three, which is a field assessment, would be delayed to 2015.

Study 3.3.3, Evaluate Downstream Passage of Juvenile American Shad. Field work of that would be delayed to 2015.

3.3.4, Evaluate Upstream Passage of American Eel at the Turners Falls Project. No change in that schedule.

3.3.5, Evaluate Downstream Passage of American Eel. Entrainment using the Hi-Z tags would continue to be in 2014, entrainment assessments. Field work delayed on a radio telemetry study. That's eels coming from upstream. So the downstream movement studies will be delayed to 2015.

3.3.6, Impact of Project Operation on Shad Spawning, Spawning Habitat and Egg Deposition in the Area of

the Northfield Mountain and Turners Falls Projects. And that's a radio -- because of the radio telemetry component we would proceed -- you would proceed with task one, but other tasks would move to 2015.

There was a question there also on -- there was a stakeholder meeting scheduled for very early in 2014 planning session, and that would like -- it would be -- it could be delayed as well. There was no firm schedule set for that.

3.3.7, Fish Entrainment and Turbine Passage Mortality Study. That was related to the turbine mortality study where all the needed data from the route of passage and fish assemblage studies. So the entire study would be delayed to 2015.

3.3.10, Assess Operational Impacts on Emergence of State-Listed Odonates in the Connecticut River. Delay that to 2015.

3.3.11, Fish Assemblage Assessment. Because of coordination with the Vernon, studies going on at Vernon, delay that to 2015.

3.3.12, primarily of physical and hydraulic study, no change in that schedule.

3.3.13, Impacts of the Turners Falls Project and Northfield Mountain Project on Littoral Zone Fish Habitat and Spawning Habitat, there was a literature review

component of that study that could proceed -- or would proceed in 2014, and the rest would be moved to 2015.

3.3.14, Aquatic Habitat Mapping of Turners Falls Impoundment, no change to that schedule; it would proceed in 2014.

3.3.15, Assessment of Adult Sea Lamprey Spawning Within the Turners Falls Project and Northfield Mountain Project Areas, delay the entire study to 2015.

3.3.16, Habitat Assessment Surveys and Modeling of Suitable Habitat for State-Listed Mussel Species, that is to be determined. That's before the Commission. We understand the concern of that is temperature data potentially needed in 2015 to show the effects of Vermont Yankee not operating.

3.3.17 is primarily physical access study. No change in schedule; proceed in 2014. That's Assess the Impacts of Project Operations of the Turners Falls Project and Northfield Mountain Project on Tributary and Backwater Area Access and Habitat.

3.3.18, the potential Impacts of the Turners Falls Canal Drawdown on Fish Migration and Aquatic Organisms. No change in schedule.

3.3.19, Evaluate the Use of an Ultrasound Array to Facilitate Upstream Movement to Turners Falls Dam by Avoiding Cabot Station Tailrace. That would be delayed.

It's a second-year study as originally planned. It would be delayed to 2016.

4.2.3, Hydraulic Study of Turners Falls Power Canal. If it were to be approved the recommendation would be to move it to 2015.

MS. DONLAN: -- the erosion studies?

MR. DEVINE: Yes, I'm sorry. The erosion studies, that would be 3.1.2 -- thank you, Andrea.

There was an issue there that was brought up was the potential for increased ice effects and would that modify transect locations to understand that potential for increased ice effects. The idea appears to be that that could be addressed by transects being picked through the consultation process and ice could be considered in that transect location selection process.

MR. SULLIVAN: Tom Sullivan.

So it's not clear to us that accommodating ice is related to transect selection. So although we agree we can go back and look at the best way to accommodate ice with VY, the specific place in the study where it's handled, you know, we don't agree today that it would be a transect selection. We'd need to go back and kind of examine that.

MS. DONLAN: I think we were arguing that it needs to, but just that it needs to be considered.

MR. SULLIVAN: Right. And we would agree with

that. I mean we certainly can go back and look at the best way to accommodate it in the study. But, as I said, it was kind of a new issue for today and so we'd need a little bit of time to go back and do that.

MR. HOGAN: Well, it --

MS. DONLAN: More importantly, I felt that there needs to be a field observation of icing on the banks after VY shuts down, which is not currently in this causation study schedule.

MR. SULLIVAN: And again, I'm not sure we can agree with that today. But we will go back and look at ice.

MR. HOGAN: So is it appropriate for this study to be amended to address ice specifically?

MR. SULLIVAN: It would seem on the surface --

MR. HOGAN: Let me rephrase that. Is it appropriate to consider the need to amend this study to address that ice-specifically?

MR. SULLIVAN: Yes.

MR. HOGAN: All right.

I think we should probably develop a process to do that, you know, that would be -- have a conversation with stakeholders specific to that discussion. If it's not just a matter of, 'We can deal with it in transects,' or other ways assuming -- you need to look at what you're proposing or...

What I'm hearing you, Tom, is to say we need to take another look at it. And what I'm hearing is 'We'd like to be involved when we take a look at it.'

So I think the result could be we don't need to make any changes, or maybe the result is we need to make the official modifications. I don't want to regard waiting on the study, I don't want to hold up the other components of it. So I'm wondering do we need to have a look at an amendment?

Clearly if you have a field component, as Andrea is talking about, that couldn't occur until 2015, that field component itself, because you need ice to evaluate it.

But I'm wondering if, you know, when you take a look at it if you could come up with a suggestion of how you want to address it in consultation with stakeholders and provide that to the Commission, that would great.

MR. SULLIVAN: Okay.

MR. HOGAN: And just keep in mind that we can also deal with that through the 5.15 regulations after the ISR comes out. So I mean it doesn't necessarily have to take place tomorrow. But after this meeting, you know, it's a recognized issue that is going to have to be taken into consideration. And I can probably get you more guidance when I go back to the office.

MR. SULLIVAN: So would some of that guidance be a time frame as well? What I have here is...

MR. DEVINE: John Devine, HDR.

So FirstLight will consider how possibly to accommodate ice as an issue with respect to the study.

Is there a time frame FirstLight would --

MR. SULLIVAN: We'll provide guidance to the stakeholders with (inaudible). We've still got to figure out the process.

MR. HOGAN: Mark.

MR. WAMSER: The only thing I just don't -- I don't want to get into is FERC has a rule on this study plan determination. So if there's consultation, that's fine if we're talking about ice. But all the other things are off as far as we're concerned. We're not revisiting how we're going about doing the remainder of the study.

MR. HOGAN: Generally speaking, Mark, I would agree with you. We've done a determination; we've made a call. The only reason I would say that that call could be -- should be reconsidered would be -- . There's a process for looking at ice that may influence something that we've already made a call on.

So I'm not going to bind my hands, Mark, so say that everything else is off the table. But I agree with you, there is a determination in place. Maybe the option is

to look at a separate study for ice; I don't know, you know. The scope could be very narrow, yes.

MR. MEYER: Just one other devil-in-the-details study.

If -- there's a few studies that have been kicked mostly over to 2015, but some of the literature or looking at past studies we'll start next year, the year coming up. I'm just wanting some assurances that that won't preclude if you need two years on the ground to get the study done with significant data that nobody's going to cry foul if most of the stuff is collected in 2015 and then you decide that you need 2016.

I just don't want anybody coming back and saying, 'You're asking for three years of study,' just because we're feeling a little pressure. If that's understandable, it's requested.

MR. HOGAN: It is. As I -- we need to embark on a licensing decision. You know, if that means that studies are done in 2016, that means studies are done in 2016.

We recognize that this is a very unique situation. When I polled my co-workers, none of us could think of a time where we were in the middle of re-licensing and knew of a projected baseline change in the middle of study season. So -- and I don't foresee -- I recognize your

concern. We're interested in the data.

MS. WOOD: Ken, can I ask a question about -- Julia Wood.

I just want to impress you a teeny bit on the erosion study we were just talking about. You said FERC would provide some guidance about this ice component. Do you envision doing that in the study plan determination or in advance?

MR. HOGAN: I don't know yet.

MS. WOOD: Okay.

MR. HOGAN: I have to go back and talk to my supervisors and see how we want to handle it.

I do envision that we will have -- kind of jumping into the next item on the agenda -- but as a result of the meetings from today and tomorrow, I do envision that we will issue some type of process timeline for getting to the next study plan determination -- Okay? -- that covers the aquatics. You know, the study plan determination that I think will determine when the studies are conducted based on the information that we've heard at the meetings.

So as far as codifying it for 2014 or 2015, I think that's -- determination.

If there are studies that need to be modified as a result of the VY, we could either deal -- and it's a 2015 study under our recommendation to deal with that in the

study plan determination, or we could ask for a revised study plan before that. So that the category of the ice may fall into that. But it could be a component of the study plan determination. I just don't know how we're going to -- .

MR. BENNETT: Hey, Ken, John Bennett. Two questions sort of related to the erosion study and the ice issue.

One, the stakeholder consultation just wanted to try to be clear that I would represent interested stakeholders and want to make sure I get on that list for that consultation.

The second question is more substantive. And that has to do with the ice study itself. And one might contemplate that some sort of baseline information gathered this year while there is hot water keeping the ice minimized would be valuable information to compare to next year when the hot water is not keeping the river ice-free.

MR. HOGAN: I think what I heard, John, was that the -- and unless I hear a request differently, study 3.1.2 is going forward as required by the Commission in 2014. And I didn't hear anybody say, 'We want to move it.' So you will have this year's data.

MR. BENNETT: At present it doesn't appear to contemplate ice very much. And if they're proposing to

contemplate including ice, baseline information-gathering this year might be useful in evaluating that.

MR. HOGAN: Well, we're going to look at the issue.

MS. DONLAN: Andrea Donlan, Connecticut River Watershed Council.

Since you've already issued your study plan determination on this study, I don't know what this means legally because it's our collective groups aren't -- you know, I guess if we were a licensing agency or whatever we could have issued some -- or written a dispute. But we didn't. And we're not even able to. And so does this -- but yet the door is sort of open on study plan determination because half of the studies weren't determined.

So I'm just wondering, like, should we submit a request for a study at this point to ... because of the legality? I don't know. I'm not a lawyer so this seems like a weird gray area.

MR. HOGAN: I think we've gotten a request to look at ice, you know, with a greater level of concern than previously thought necessary.

You can -- if you want to elaborate more in writing about the need or how you'd like to see that done, feel free to file anything in the record. Our record is open. It is an issue that we've already talked about

internally, but we will be looking at.

We've kind of got the recommendations from the team, but we also -- I will admit, ice is not something that we -- when we were coming up with our own internal list of VY potentially affected studies. And thank you for bringing it up because we all kind of sat here around the table saying, 'Yes, okay, that makes sense.'

So we need to look at the issue a little more closely than what we're currently requiring; how is the data going to be used and what we're expecting out of the data.

MS. DONLAN: So because you have issued your determination on the study, you don't feel that the door is closed for you to revisit it?

MR. HOGAN: We would never close off.

(Laughter.)

MR. HOGAN: The door is open all the time.

I said it before: We are interested in making sure that we have the data that we need to do our evaluation. And that's all I can say. I mean we're not -- we want good data and we do need to analyze potential project effects. And we'll evaluate what information that is. And if we need an ice study, we'll require an ice study. If we feel that it's something different, we'll do something different.

MR. WAMSER: I have a question, I guess a

procedural question. So you guys issued the study plan determination letter on many of these in September. It's gone during the time when the study disputes were due. A lot of the governmental agencies were not in operation. There was nothing formally in the record as to if they get extended or not.

So where are we on that? Are those studies that have been issued --

MR. HOGAN: The formal dispute period on those studies is over.

MR. WAMSER: Okay.

MR. HOGAN: And when we did do the new determination the determination on the aquatic studies, that will have a formal dispute process associated with it.

So we're kind of already into the licensing process. The schedules have kind of started the meeting with that based on our collection.

If you folks have more questions or concerns and you need me to clarify the different avenues that the Commission can utilize to handle these scheduling issues with the studies?

MR. PUGH: Do you have a time frame for resolving these questions that we've brought up here about VY?

MR. HOGAN: Yeah. I think as far as, you know,

the recommendations that have been made as far as the shifting or how to deal with the specific studies, we will capture those in the study plan determination and make a formal call that, you know, this study should be done in 2015; we're going to adjust the schedule to propose for 2014. I don't see a need for --

MR. PUGH: Writing in this?

MR. HOGAN: Right, to change dates. I think we'll be able to handle that --

MR. PUGH: I guess I was asking when the study plan determination might be issued.

MR. HOGAN: What I'm planning to do is go back to the office after these meetings and talk with my supervisors about what we've heard and coming up with a schedule that makes sense for all of us.

I still don't know if, based on tomorrow's meeting with TransCanada, if there are going to be studies that need to be changed in methodology, in which case we'll want to make sure that there's a stakeholder process for those changes. And that will influence the schedule for the study plan determination.

So what I hope is within two to three weeks, though, we will issue a letter or a notice providing a schedule moving forward with an alternate study plan determination on when that will be issued.

MS. DONLAN: Andrea Donlan.

Are we assuming there's close to zero percent chance that Vermont Yankee will either decide or be forced to use their cooling towers instead of discharging to the river?

MR. HOGAN: We are going on the assumption of what they presented today.

MS. DONLAN: Which is they're operating at normal, which is currently what they've been doing.

MR. HOGAN: As normal... Well, I'm talking about after the decommissioning. You're talking about for next year?

MS. DONLAN: For the next year.

MR. HOGAN: Current conditions. Yeah.

Does that answer your question?

MS. DONLAN: Essentially.

MR. HOGAN: What's that?

MS. DONLAN: I mean I'm assuming -- they left before they heard sort of all the -- and they're not even the staff people who would be making any sort of decisions -- but how much of an impact it has on this process.

MR. RAGNESE: I might say you're right, about zero chance.

(Laughter.)

MR. RAGNESE: I mean I have no idea. But I

mean they propose what they propose is what you're saying.

MR. HOGAN: And I don't normally --

MS. DONLAN: Uh-huh.

MR. HOGAN: -- say in -- and you know when I provide any influence or opinions on how they should do it. It's not within FERC's jurisdiction and it would be highly inappropriate.

MS. DONLAN: Okay. Well, I mean the State of Vermont could issue a new permit; they might appeal it, you know. And then the whole thing would, you know, never get resolved in the next year.

But does anyone have any information in this room that would lead them to think that there's more than a zero percent chance that they would go to --

MR. HOGAN: Cooling?

MS. DONLAN: Yeah, cooling tower.

(No response.)

MS. DONLAN: Okay.

MR. HOGAN: And, you know, if they do that'd be an influence on the river. But I think the way that we've discussed the studies today, it takes the conservative approach that the change occurs, you know, at the end of December next year as opposed to tomorrow, let's say.

MS. DONLAN: Right.

MR. HOGAN: So I'm not sure. And other than

not needing to change the studies in that case, I don't think it negatively affects the opinions we've made -- or that we've discussed today.

Does that make sense?

MS. DONLAN: Uh-huh.

MR. MEYER: One more on that, just since we're throwing out hypotheticals.

What if something happens at the plant? They've had to shut down before. Would we just stick with what we agreed to now, or -- I guess we'd have to get to that. I mean there is a possibility that they could --

MR. HOGAN: If something were to happen that would influence an ongoing study, the ILP has a condition for study data that's collected under anomalous conditions -- Section 5.15 of the regulations -- and we'll deal with it.

Any other questions?

(No response.)

MR. HOGAN: Well, I found this to be extremely valuable. I hope you all had a (inaudible). But it really helps us to streamline the data collection and makes sure that we're going to get good data. So thank you all for coming and sharing your thoughts.

And we're way ahead of schedule.

(Whereupon, at 1:00 p.m., the Vermont Yankee

Technical Meeting was adjourned.)