YUKON UTILITIES BOARD

YUKON ENERGY CORPORATION APPLICATION FOR THE REFERRAL OF THE ELECTRICITY PURCHASE AGREEMENT (EPA) WITH TLINGIT HOMELAND ENERGY LIMITED PARTNERSHIP (THELP) TO THE YUKON UTILITIES BOARD FOR REVIEW UNDER THE *PUBLIC UTILITIES ACT*

P R O C E E D I N G S

Volume 2

July 20, 2022

Held via videoconference

Whitehorse, Yukon

Proceedings taken at the Yukon Utilities Board via videoconference.

Volume 2

July 20, 2022

Richard Buchan	Chair
Bonnie King	Vice Chair
Anne Middler	Commission Member
Lesley McCullough	Commission Member
Alison Sabo	Commission Counsel
Deana Lemke	Commission Staff
Dwayne Ward	Commission Staff
P. John Landry, QC	For Yukon Energy Corporation
Christopher Cullingham	For ATCO Electric Yukon
Nathanial Yee	In his Own Stead
Joshua Dyck	InterGroup Consultants
John Maissan	In his Own stead
Roger Rondeau	For Utilities Consumers' Group
Lorelee Vespa, CSR(A) RPR CRR Danielle Harmata, CSR(A)	Official Court Reporters

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(PROCEEDINGS COMMENCED AT 10:02 A.M.)

A. HALL, E. MOLLARD, C. OSLER (For Yukon Energy Corporation), previously affirmed

THE CHAIR: Good morning, everyone. I see Mr. Rondeau has been able to log on.

So just before we go, are we getting -- the speakers seem to be quite loud. I'm hearing a little bit of almost feedback.

Okay. So after our full day or almost full day yesterday, we've gotten the transcript. So we've got a few preliminary matters.

Mr. Rondeau, I gather you had some travel difficulties that prevented you from attending yesterday morning?

You're muted, Mr. Rondeau. If you can unmute yourself. All right. He's unmuted now. 10:03

Mr. Rondeau, can you hear us now?

MR. RONDEAU: (Indiscernible).

THE CHAIR: We can't hear you at all.

MR. RONDEAU: (Indiscernible).

THE CHAIR: No, the --

UNIDENTIFIED SPEAKER: No one is hearing him.

THE CHAIR: The court reporter can't hear you.

All right. Mr. Rondeau, check -- did you email him? 10:04

MS. LEMKE: Yes.

THE CHAIR: Check your email. You should have an email from Ms. Lemke with a phone number that you can call in to.

UNIDENTIFIED SPEAKER: It's also in the chat. You should

be able to see it in the chat.

THE CHAIR: Well, that's -- Deana, you sent him just the regular phone number that he can call in, just for audio? Okay. You gave him the Zoom number? Okay.

You got that message, Mr. Rondeau, in your chat. Can you hear us now, Mr. Rondeau? And can you test -- give us your voice?

MR. RONDEAU: (Indiscernible).

THE CHAIR: Try speaking into your phone, Mr. Rondeau. 10:06

MR. RONDEAU: (Indiscernible).

MR. YEE: This is Nathaniel Yee. I don't think he's connected on the phone. I am the one connected. There's a call-in user.

THE CHAIR: Yeah, there's another. I see. Okay.

Well, Mr. Rondeau, we're past our start time. We had a technical check-in arrangement on Monday at 3:00, the very purpose of which was to overcome these kinds of technical difficulties and to ensure that everybody was ready to go yesterday. 10:06

So, in the circumstances, I think we'll have to consider you as having forgone your opportunity to ask any further questions today. You had the opportunity

yesterday, and I'm sorry, we can't accommodate you today because of these technical difficulties that could have been avoided with the check-in on Monday.

So we'll proceed to check in with you, Mr. Landry. Do you have any preliminary matters that you would like to deal with before we get on with the continuing examination by Ms. Sabo?

MR. LANDRY: Can you hear me okay, Mr. Chair?

THE CHAIR: You might need to increase the volume on your microphone or try. 10:08

MR. LANDRY: Is that a bit better?

THE CHAIR: That's much better, thank you.

MR. LANDRY: Okay. Thank you. I apologize.

Just in terms of Mr. Rondeau's issue, that was one of the reasons why I asked the question yesterday after -- before Ms. Sabo started, was for the very issue that we're now dealing with, so I wasn't aware of accommodation for Mr. Rondeau. But, in any event, you've made your ruling, sir.

Mr. Chair, what we do have, though, I think that 10:08 will help, is, I think there were three undertakings left yesterday, if I have that correct. If we could, Ms. Sabo, Mr. Chair, have the panel deal with those three undertakings first before we continue with the cross-examination by Ms. Sabo, that would be helpful.

THE CHAIR: Yes, that would be good. So, yes.
MR. LANDRY: Okay. So the first two will be dealt with, just so everybody is aware and the court reporter, will be dealt with by Mr. Osler, and the third will be dealt with by Mr. Mollard.

And just a small technical issue, virtual hearing type thing, the first one will deal with an Excel spreadsheet. I think it's a couple of pages. He will speak to it, Mr. Chair, and then what we'll do is once we're done with that, we'll email a copy, and then it can be formally introduced as an exhibit, if that works okay with you. 10:09

THE CHAIR: Yeah, that's -- unless, are we able to have it -- enable the YEC panel to put it up on the screen? Would it be easier to do it that way so that it would be on the screen while Mr. Osler speaks to it?

A. MR. MOLLARD: Unfortunately, Mr. Chair, we're not set up to share documents.

THE CHAIR: Oh, I see. Okay. All right. 10:09

A. MR. MOLLARD: Yeah, yeah. So we'll file it -- we'll file it at the first break.

MR. LANDRY: Yeah. Let's do it this way, Mr. Chair, because I totally get -- it's the one problem -- not a problem, one issue with the virtual

hearing. Let's see if we speak to it, and then see how it goes. It will get formally filed.

But, obviously, if there's further questions on it, once it's filed, it probably would be better once it has an exhibit number, so we can do that at the break.

THE CHAIR: Very good. Okay.

UNDERTAKING RESPONSES:

MR. LANDRY: Okay. Thank you.

Mr. Osler, would you like to deal with the first couple of undertakings? 10:10

A. MR. OSLER: Okay. Morning, everyone. The first undertaking I'm going to deal with related to page 145 on the transcript -- sorry, page 103 on the transcript -- I misspoke -- where we were asked to provide the calculations in an Excel spreadsheet, explain the numbers that were provided in Footnote 16 in the amended filing, Exhibit B-5.

The numbers were for the levelized cost of capacity for a thermal plant, and they showed how we came to a number of $200 per kilowatt, which was between the numbers, in 2024 dollars, of 193 per kilowatt and $220.60 cents per kilowatt. So the question was how did we calculate and show us in an Excel spreadsheet the 193 and the 220.6. 10:11

The sheet we will file will show how the calculations were done, and I'll just go through the assumptions so they're on the record. They're also in the -- in the document.

So the first set of numbers came from a Midgard report in 2019, for a 12.5 megawatt new diesel plant in Takhini, costing $32.5 million for the 12.5 megawatts and a fixed annual O&M cost of $806,000.

The Midgard analysis assumed a weighted average cost of capital that they were provided with at that time by YEC of 4.92 percent and an assumed inflation at 2 percent per year. 10:12

The result, as shown in the calculations that are sent to you, is in 2019 dollars. The levelized cost of capacity is $175,000 per megawatt. Escalated at 2 percent per year, that becomes $193,770 per megawatt. So that shows how the $193,000 number which, if rounded, really, becomes 194, but how that number was calculated, and it shows that, Mr. Chairman, how the calculations were done year by year over 40 years, present values and everything else that were used. 10:13

The second number that is referenced in the Footnote 16 is the $199 number in 2019 dollars or 220.6000 in 2024 dollars.

That calculation assumed the same capital costs

for the 12.5 megawatts, the same operating cost without taxes, but then added on an additional amount for income -- for property taxes if located in City of Whitehorse. And it was a minimum estimate of what the incremental cost would be for the property taxes.

So that, effectively, the annual cost per megawatt for fixed operation increased from $64,000 in the Midgard numbers to $91,000 per year in the example, assuming the location is in Whitehorse.

So that was the major change. The other change in 10:14
the calculation was that YEC used the weighted average cost of capital from its 2021 GRA filing, where, effectively, they had filed 8.7 percent for equity and 2.9 percent for debt for a weighted average cost of capital of 4.79 percent. So it's slightly different than Midgard's.

Based on that, the numbers are shown to come out to be 199,783,000 per megawatt for 2019, and 220 thousand 576 thousand for 2024. There are notes to each of those two tables to explain what I just 10:15
finished saying, but I think, Mr. Chairman, that -- that is the essence of what the tables will show, and we will provide them by email as soon as possible.

I think --

THE CHAIR: Thank you, Mr. --

A. MR. OSLER: I think the idea is you want to give an exhibit number after you get the table, but there will have to be an exhibit number for this document, so...

THE CHAIR: Yeah. So I think based on our exhibit list, the B series of exhibits are the YEC documents, and it would appear B-16 would be the appropriate exhibit number.

A. MR. OSLER: Thank you. When we send it, then, Mr. Chairman, we will put that exhibit number on the Excel file document so that it's clear. 10:15

THE CHAIR: Very good. Thank you, Mr. Osler.

A. MR. OSLER: So that was the first undertaking. A good way to start the day, with a bunch of numbers.

The second undertaking was to do with page 145 of the transcript, and it was following our discussion about modelling of the water and our review of YUB-YEC-2-29, which explain information on how SNC-Lavalin had done some modelling, and also how Knight Piésold had done some modelling and how they were brought together into a ratio of 70 percent/30 percent for the modelling that was used in the amended application. 10:16

And the question we were asked to deal with was to confirm that the 51 modelled years that we see in the

filing, Table A1 if you like, are based on four years of actual flow data. And we were asked to explain, you know, any extra points we had to make about it or, if that statement was wrong, what would be the correct statement, effectively.

In the process of reviewing this last night, sort of talked to the people in YEC who deal with the modelling a bit and also sort of read more thoroughly and refreshingly the information from SNC-Lavalin that had been provided to YEC. 10:17

The general point about using four years to get a model calibrated and then extrapolating it for 51 years is correct, but it may imply things that are a little bit more cavalier than the engineers would certainly ever want anybody to think.

They have a very comprehensive model they call "SWAT," soil and water assessment tool, and what they were doing was looking at the Surprise Lake over four years and seeing exactly how much water is implied to have to have gone into that lake in order to match the 10:18 recorded levels of the lake.

So, in order to calibrate the model, they say in the quote from YUB-2-29: (as read)

"An inflow series into Surprise Lake was reconstituted based on the available

lake level data from 2015 to 2018 and the hydraulic properties of the outflow structures."

So they were doing a calculation based on those years to constitute and derive inflow data based on what they just finished saying.

They then have a comprehensive model of climate data, temperatures, precipitation, and such other and things, as well as land data on the terrain and the properties of the terrain, and they used that data to develop their model, their SWAT model comprehensively over those four years and getting the correlation from the climate data and the inflow data that they had just derived as I described it. 10:19

They then took that model, which they claimed to have now been properly calibrated and looking quite accurate, and they then took all the climate data that's on record for precipitation, temperature, as well as the land data that I just described, because it's a land and water model, and they extrapolated for the years 2000 -- 1964 to 2020. And the numbers that ended up in exhibit -- in our filing were 1970 through to 2020. 10:19

So, yes, they took four years and then they extrapolated it, but they would certainly want me to make very clear that they were using a comprehensive

model that they call "SWAT" to correlate information from the four years with water data, and then used a whole bunch of other actual precipitation and climate data to derive the numbers that they provided.

So that's the direct question on the SNC-Lavalin model. I don't have the same degree of information available on the Knight Piésold model, but they were using a slightly different model, and they were using Spruce Creek watershed model data calibrated, but they too were using four years. 10:20

And the answer to the question YUB-2-29 tells you the rest, Mr. Chairman, in terms of the one model came out with one set of numbers and the other model came out with the -- a slightly different set, and there's a graph that shows the difference.

And the final result, just for the record, is the amalgam of the two. It isn't just SNC-Lavalin. It's SNC-Lavalin and Knight Piésold, as described in the answer.

The only other thing that I looked at in the spare time between last evening and this morning was that there was a reference in our answers to Morrison Hershfield. And I can recall, when we were doing the amended application and talking to people, that the point was made as follows: Originally everyone 10:21

started with Morrison Hershfield's data that were derived the way they derived them going back 1964, et cetera. And Morrison Hershfield came up with numbers that we were originally using when we started this negotiation process which were higher than any of the numbers we're talking about right now. I think they had around 46 gigawatt hours for the annual average, long-term average, and about 38 or so million kilowatt hours for the winter period, as we define it nowadays.

So during the process of negotiating the original EPA, I have -- now can confirm that around March of 2021, SNC-Lavalin, working with THELP, came forward with an adjusted set of numbers, still using, basically, the Morrison Hershfield data, but adjusting it for how they thought the actual operations would work, and that reduced the numbers down to the numbers you saw in the original application. Quite a lot lower than Morrison Hershfield. 10:22

And as people said to us during the amended application process, the amended EPA, between SNC-Lavalin and Knight Piésold, they effectively came back up a little bit towards where Morrison Hershfield had been in these amended model -- more recent modelling and totally new approach. 10:22

And on that basis, YEC's general conclusion, as

stated in the answer, was: "We've had three different groups of engineers look at this. We're pretty comfortable that the actual results must be somewhere in this range." And we can discuss the implications for the EPA and customers if the answer differs a little bit, but we were pretty comfortable that these people had all come up with something that's pretty close to what's going to happen within that range.

Now, Mr. Chairman, I think that's about as good we can do in responding to more information on the modelling. 10:23

THE CHAIR: Thank you very much, Mr. Osler. Yeah, your elaboration definitely helps to expand our understanding of where those numbers came from.

Mr. Landry, you have one other of your panel members?

MR. LANDRY: Yes, Mr. Mollard will give the answer to the third undertaking, Mr. Chair.

A. MR. MOLLARD: Thank you, Mr. Landry.

Good morning, Mr. Chair. 10:24

Yes, I'll address the undertaking that's flagged in the transcript at page 171:

"To advise what disclosure was made to stakeholders of available options to the 20-megawatt plant, including whether one

option was the continuing use of rental diesel generators."

So just a point of clarification on this exercise, the focus of the exercise undertaken in 2019 was specifically to address options for a permanent fossil fuel project more specifically looking at the preferred location and the fuel type.

So the report that we attached to YUB-YEC-1-36 does summarize a couple of points that I think goes to this undertaking. Stakeholders pretty clearly supported renewables over fossil fuels, talking about batteries and geothermal, biomass, wind/solar. 10:24

On the rental side of things, rentals were not specifically mentioned as an option, although a number of stakeholders did raise rentals; and in that context, their position was that rentals made sense as a short-term solution to allow the utility time to further plan and explore opportunities for permanent renewable solutions.

That concludes my response, Mr. Chair. 10:25

THE CHAIR: Thank you, Mr. Mollard.

We just need to adjust the volume in the room a little bit.

MR. LANDRY: Are you having a hard time hearing us, Mr. Chair, just to --

THE CHAIR: We can hear you better. We were just trying to find the sweet spot so we didn't have too much volume coming out of the speakers that would then feed into the microphones. So let's try that.

MR. LANDRY: Given I have to say one more thing, let's see how it works in terms of the volume.

THE CHAIR: Okay. You're our guinea pig.

MR. LANDRY: Yeah, I'll be the guinea pig and try to be efficient at the same time.

Mr. Chair, just because I know they're -- the issue of undertakings, so from our perspective -- which would be good, given, you know, that Ms. Sabo will continue. From our perspective, all of the undertakings to this point in time have now been answered. 10:26

MS. SABO: Okay. Thank you, Mr. Landry. Thank you, Mr. Chair.

MS. SABO QUESTIONS THE PANEL:

Q. I have a few areas of follow-up from yesterday. I'll start with dependable capacity and dependable capacity payments. Is everybody hearing me okay on your end? Not too loud, not too soft? 10:26

A. MR. HALL: It's a bit -- a little bit --

UNIDENTIFIED SPEAKER: -- move your microphone.

A. MR. HALL: Speak up, yeah.

Q. MS. SABO: Okay. How about now?
A. MR. HALL: Yeah, that's better.
Q. Okay. Thank you. I'm going to refer you to the transcript, pdf page 58, and starting at line 3. I'm looking at line 3 to 22.

Mr. Hall in that exchange, you were asked, should annual payments be based in actual performance.

And you responded stating, starting on line 7: (as read)

"Well, as we outlined in that IR response, you know, this is a little bit to do with, you know, the dynamics of dealing with an independent entity that has a project it needs to finance, and they -- their financial modelling -- or financial -- and their economics relied on them having a degree of certainty around those dependable capacity payments." 11:10

Do you see that? 10:28

A. MR. HALL: Yes.
Q. So what we're wondering is, is because we've got a capacity-payment element and an energy-payment element under this agreement, does that response also apply to the energy payments?

A. MR. HALL: Well, the way the terms are constructed, there's certainty around the energy price. Obviously, we pay, based on the actual amount of energy delivered each year. So, in a sense, there is a bit of a difference there.

A. MR. OSLER: It's Cam Osler. I think we discussed it a bit yesterday, but let's try it again.

In dealing with energy, we pay for what is actually delivered. That's Mr. Hall's first point. The actual volume. But the price is based on an 10:29
estimate of how much thermal we're displacing on average over the long term by purchasing 34 gigawatt hours a year.

That estimate is locked in for the term, but it varies between 2024 and 2035 because of the assumptions we made about changing the load. It's also locked in for the term because we assume 19 cents per kilowatt hour for the blended fuel cost so that if we were displacing, say, 20 percent -- 70 percent, let's say, of the 34 gigawatt hours was displacing thermal, we 10:30
were valuing that thermal at the 19 cents in 2024 dollars.

And so to the extent that the actual thermal price was to change, it would be something that's not reflected in the actual amounts they're paying.

And then I went through at some point yesterday the degree to which those numbers are sensitive to whether the price is higher or lower or the volume of load is higher or lower.

So unlike the dependable capacity, we are paying for what we actually get. We're not paying for something that's committed but not necessarily delivered. But the actual price that we're paying will, of course, probably not correspond to actually what the fuel price is at any one moment in time or the loads on the system, if that helps. 10:30

Q. It does, Mr. Osler, and it leads me perfectly into my next question. From the sellers' perspective, from THELP's perspective, since displaced thermal is not known until after the fact, does that present a risk to their cash flows?

A. MR. HALL: Well, the only risk to their cash flows is water variability from year to year.

A. MR. OSLER: Right, or --

A. MR. HALL: Or their ability to maintain up-time or reliability. 10:31

A. MR. OSLER: Yeah, in the original EPA, they negotiated what we called a "fixed price" for the minimum volume and then a lower price for the -- everything else, and I think they had their mind

focused on cash flow, that they wanted to make sure they had a minimum cash flow that they could describe to their bankers or anybody else. But in the final EPA as amended, we were quite happy to get back to an average price overall, and they didn't object to that at all.

So I don't think they were worried about the cash flow variability based on how much they deliver each year. I think they were very worried about the dependable capacity issue, perhaps because of just trying to explain it to other people, et cetera. I don't know. But they certainly were quite different dealing with the two issues in the context of what they could deal with and couldn't deal with. That's all I can tell you. 10:32

Q. Thank you, sir. Maybe a more simple question to take a break from that immersed conversation. Does the EPA use Statistics Canada CPI as its CPI measure, Mr. Osler?

A. MR. OSLER: I believe the answer is yes, but there's a definition in the EPA. 10:32

Q. Okay. If you believe so, do you know what index Stats Can index it uses? We just didn't see it in the agreement, but maybe we missed it.

A. MR. OSLER: All right. The definition of

"CPI" means consumer price index for Canada. It's in Definition 1.43 on page A1-48 of the application, just so that that's on the record.

Q. Great.

A. MR. OSLER: And it goes through -- it gives you the information as to what it comes from.

Sorry, Ms. Sabo, did you ask me another question, because I didn't quite get it.

Q. No, that's fine.

A. MR. OSLER: Okay. 10:33

Q. I'm going to go back to the transcript, pdf page 121, starting at line 13. And on page 121, Mr. Osler, I asked you a question which starts at line 13 or continues at line 13, which was: (as read)

> "...Mr. Osler, I guess the key question we're trying to get to is, assuming that YEC could obtain the same government funding as THELP did, so let's go get into the level of grant funding that would be available for a project, could you build -- could YEC build and operate a hydro plant to provide the same capacity and energy deliverables as what's done with the Atlin project at a less price..."

Just to follow up on that, because we're still struggling with this a bit, you have -- basically there could be two options for maintaining energy and maintaining capacity: One is to enter into the EPA, and the other is to own and operate a plant to provide energy and capacity. Are you with me?

A. **MR. OSLER: I'm with you in principle, but in practice, the point that YEC keeps trying to make is, in practice, we don't have the option to own the Atlin plant.** 10:34

Q. Right.

A. **MR. HALL: And if I would comment and to add on that, there were no other options on the table that were nearly as far advanced -- as advanced. There were some options, other hydro projects identified in the ten-year renewable plan, but they would be starting from scratch, having done little or no work on them, with First Nations where we had -- we would have had no feeling for whether there was support for hydro in their traditional territory.** 10:35

Q. Yeah.

A. **MR. HALL: So it's a hypothetical question, but that's all it is. There was no real option to pursue another hydro project.**

Q. Yeah, I guess what I'm --

A. MR. HALL: We're a bit confused about where the thought exercise leads, because there was no real option other than that.

Q. Yeah, I was just trying to get to, Mr. Hall, kind of what -- did you do any comparative analysis on that basis; right? If you had a plant that you would own and operate versus what's under the EPA, what would that look like from a net present value basis? Did you do anything like that?

A. MR. HALL: Well, I'll comment on that, and then perhaps Mr. Osler can add. But -- and the comparative analysis is really -- underlies the principle that we applied in coming up with the price to pay for energy and capacity, namely thermal. 10:36

I mean, that really is the benchmark that was used. But we -- I mean, there is some information on -- in the ten-year plan on what LTOE and LTOC might look like for other -- those other hydro projects.

But, again, I mean, thermal -- and, you know, the YUB has been quite consistent over time in using thermal pricing as the benchmark for a comparison of projects or -- so I think you can take some comfort that because the pricing is based on those thermal comparators, that it's, in a sense, the lowest-cost option relative to thermal. 10:36

Q. Okay.

A. **MR. OSLER: So let me try and -- in JM-1-7 that you asked us about was a question that told us to assume the same parameters and costs of the Atlin project and what would it -- what difference would it make if YEC somehow magically managed to own it all. And we answered that question.**

And the answer, in a nutshell, shows you that at the -- cost of capital that YEC would probably have, the project wouldn't be as economic as letting THELP do it, because they have a different -- they have 80 percent debt, at least, if not more. We only -- we have 60 percent debt, et cetera. 10:37

So it's not very informative, but it is what it is. It's an answer to a question as asked.

Now, was YEC at all interested in confirming that the cost picture that THELP is developing makes sense? That might be another version of the same question. Mr. Hall has made the point to you and certainly made it to me that we didn't have any other options that were hydro. So, hypothetically, you can talk all you like, but there wasn't another hydro option for YEC to look at owning. 10:38

And THELP -- just for the record, THELP was not remotely interested in having YEC ownership in whole or

in part in the project. That was an early matter resolved very quickly at the outset of discussion. Because we raised it, and sometimes with First Nations, they might want you to do that. But they'd already done a hydro project; they thought they could do this hydro project: "Thank you very much, let's do an EPA," period.

So from the point of view of policing what they're doing, due diligence, the general attitude of YEC was they've got the CIB, they've got the federal funders, they've got lots of people checking whether or not the costs that they're quoting makes sense. We won't get into that game. We will focus on what we can afford to pay based on what the ratepayers will end up having to pay. 10:39

So we never got into trying to double-check or cross-check what their cost structure was or anything else. We do from time to time try and understand some of the things so we can help solve a problem, but -- but it's not our ball game. It's not our problem to solve, and we don't have the time and the energy and the resources to do it, and they wouldn't pay us for doing it either. 10:39

So all those things in mind, if that helps, that's about as far as we can go in terms of trying to help

understand what would happen with a YEC-owned plant.

Q. Okay. Thank you, Mr. Osler.

Another thing we would like to help our understanding is if one of the YEC panel could undertake to provide the levelized cost of capacity of a single 20-megawatt thermal plant in 2019 dollars. And you can use the forecast applied for in the YEC 2017/2018 GRA, if you like.

I'll give the reference to that if the panel would like that as well. 10:40

A. MR. OSLER: So the question is, rather than a 12-and-a-half megawatt plant, you'd like to know the levelized cost of a 20-megawatt plant?

Q. Yes. And the 2017-2018 GRA reference is in paragraph 470 of Board Order 2018-10, which I don't think you need to pull up, but those numbers were provided there.

A. MR. OSLER: Essentially, what we will do is go back and check the Midgard information base that they had provided YEC in 2019 with a range of different costs, and we will make sure that whatever we're looking at is sort of consistent with that range and those assumptions at that time period. 10:41

Q. Great.

A. MR. OSLER: But the other point that's been

made, recent discussions, is that all of those costs were 2019 before the inflation games that have happened since then and the higher interest rates and everything else that have happened since then.

So, for the record, I've been asked to make sure everybody understands that. These are -- these are old costs nowadays compared to what people are paying for doing things today.

Q. Certainly. And, Mr. Osler, put in whatever assumptions or context that makes that helpful for the Board. It's much appreciated. 10:41

So I just want to confirm that you're going to going to provide the levelized cost of capacity of a single 20-megawatt thermal plant 2019 dollars using the forecast applied for in the '17-'18 GRA with all assumptions?

A. MR. OSLER: We will do that, and we will probably, as for the 12-and-a-half megawatt, probably show the two examples, one without property taxes and one with. 10:42

Q. Thank you. That would be helpful, sir.

UNDERTAKING - TO PROVIDE THE LEVELIZED COST OF CAPACITY OF A SINGLE 20-MEGAWATT THERMAL PLANT 2019 DOLLARS USING THE FORECAST APPLIED FOR IN THE

'17-'18 GRA WITH ALL ASSUMPTIONS

Q. MS. SABO: I now want to go back to our discussion on Table A3, Mr. Osler, because that happened late in the day, and I want to go through that table again just to ensure that our understanding is correct.

So Table A3 was at Exhibit B-6 of the blackline version at pdf page 55. And 56 is where the table is.

A. MR. OSLER: I believe, just to make sure that we're all on the record together, page A3 was the table that you were referencing. It was really a version of Table A1 from the amended application that had been struck through and gotten rid of. Is that the one we're talking about? 10:42

Q. No, actually, I'm on the one on hard copy A10.

A. MR. OSLER: Hard copy which?

A. MR. MOLLARD: A10.

MR. LANDRY: Ms. Sabo, I wonder if I could just take a moment to -- so I find this? Because I'm on the clean copy, not the blackline, so I'm trying to figure out what page we're on, so -- 10:43

MS. SABO: No problem, Mr. Landry.

MR. LANDRY: If you could just give me a second while I try to track it down too.

A. MR. OSLER: I'm now catching up with you

myself. So we didn't -- this is Table A3 in the amended application, and you're in the blackline versions, which it appears there at page A10?

Q. MS. SABO: Correct.

A. MR. OSLER: Okay.

Q. And that's the one that has the 2024 load forecast --

A. MR. OSLER: Right.

Q. -- and the 2035 load forecast with the original and the amended EPA columns on it.

A. MR. OSLER: Yeah. 10:44

Q. Okay.

A. MR. OSLER: And I'm -- for my own sanity, I'm also looking at page A3 of the amended application, clean version, Exhibit B-5, just because I can relate easier to that. So, okay.

Q. Great. Thank you, sir. I appreciate that.

So to confirm, in the table, line 2, which is at the middle of the table, the bolded title that says "Atlin Winter Energy Purchases Net of AEY Losses in Gigawatt Hours," can you explain the purpose of 10:45 that line of the table? We talked about line 1, but we didn't talk about line 2 yesterday.

A. MR. OSLER: Right. Line 2 brings into play the average losses that are assumed to occur after Jakes Corner are for the energy that gets transmitted

all the way to Whitehorse, the Substation S150, which are explained in Footnote 3 to the table to be 4.5 losses.

So the 34.0 long-term average deliveries at Jakes Corner are reduced by 4.5 percent for losses to get the number that you see in the line 2 you referenced of 32.4.

So, first of all, that's what it is. Secondly, why. And, essentially, the model that was run by YEC, the XM (phonetic) model, used the 32.4 number rather than the 34 number because it was -- it was being conservative, in my opinion, because it's taking the energy that actually got all the way to Whitehorse and adjusting it. 10:46

And as I've made the point from time to time, if YEC had actually built a plant at Jakes Corner, it probably wouldn't do that. It would probably just say, "It's 34 gigs, and here's what the effect of it is in displacing thermal." But I don't criticize it because it's one more conservative element of an analysis. 10:46

The 4.5 percent, as explained in an IR somewhere, explains why they reduced it from the earlier number, which I think was about 6 and a quarter percent. Because a lot of this energy is going to be used before it gets to Whitehorse. It's going to be used in the

ATCO part of the load, where there's a whole bunch of customers.

So, you know, it's not like it has to go all the way to Whitehorse before it has some useful value; right? It's actually -- a lot of it is used in the southern Yukon below Whitehorse.

So that's why it's there. That's the best explanation I can give you.

Q. Thank you, sir. Now, to clarify in line 9, which is non-summer rate revenue, 2024 blended thermal price forecast, that provides the full energy costs for Atlin purchases; is that correct? 10:47

A. MR. OSLER: That's the price for displaced energy, 19 cents?

Q. Correct.

A. MR. OSLER: So that's note the purchase -- you're not paying 19 cents for every kilowatt hour you buy at Jakes Corner. You're assuming that every kilowatt hour that gets displaced by what you purchase which, in the second column in the table, is 24 -- at line 5 -- 24.181 million kilowatt hours of displaced thermal. That's being assumed to cost 19 cents. That you've saved 19 cents of fuel for each one of those kilowatt hours that you displaced. 10:48

And then you go to line 9, and you apply that

19 cents to the 24, et cetera, million kilowatt hours, and you end up with, okay, that's how much money we saved: $4,594,000.

And the final line, which has a typo, it says 10 equals 9 divided by 2, but it should be 9 divided by 1. I apologize for that.

Q. Great.

A. MR. OSLER: That shows the 4,594,000 divided by the 34 gigawatt hours that is actually delivered, assumed to be delivered, at Jakes Corner. So we pay -- we pay the 13 and a half cents in order to make sure that what we're paying is what we're saving. 10:48

Q. I'm just going to pass this off to Mr. Ward, who has one follow-up for you, Mr. Osler. He's probably better to ask it than I.

MR. WARD QUESTIONS THE PANEL:

Q. Thank you, Mr. Osler. Really I'm just -- it's a mathematical check that I'm trying to figure out. So yesterday Mr. Hall said, at transcript, page -- sorry, at transcript page 62: (as read) 10:49

"And, you know, only for the amount of thermal that we can avoid generating."

Okay?

A. MR. OSLER: All right. Just say that again, slowly.

Q. All right. Mr. Hall yesterday said:
"You know, we'll pay for only the amount of thermal we can avoid generating."
A. MR. OSLER: Right. Correct.
Q. And that's --
A. MR. HALL: So that's --
Q. Sorry, and that's --
A. MR. HALL: (Cross-talk occurs).
A. MR. OSLER: Sorry. Sorry, go ahead with your question. Yeah. 10:50
Q. All right. And that amount is equal to line 9 on Table A3; is that correct?
A. MR. OSLER: That is the amount in dollars that we're saving. Given all the assumptions in the table.
Q. So my first question, is that the same thing -- the amount of thermal that you're avoiding or the cost of thermal you're avoiding, that's the amount you would pay?
A. MR. OSLER: Yes.
A. MR. HALL: Well, okay, I'll answer since I made the statement. When I talked about an amount, it would have been line 5. That's the amount in gigawatt hours. 10:50
Q. Right. But the price -- and then you would multiply it by the price of 19 cents?

A. MR. HALL: Exactly. To get to --
Q. That's --
A. MR. HALL: -- line 9. Yeah.
Q. And that's all you would pay?
A. MR. HALL: For energy, yes.
Q. Yes, okay. So --
A. MR. HALL: Well, hold on. I mean, that's in the context of calculating the price; right?
Q. It's the -- no, we're talking two different things here, and that's where I'm trying to -- 10:50
A. MR. HALL: Okay.
Q. -- understand better, okay?
The -- sorry -- line 9 represents the benefit -- the thermal displacement benefits, and, again, I'm going back to your comment --
A. MR. HALL: Fair.
Q. That is the amount that you're going to pay for all the energy you get?
A. MR. HALL: Yeah.
Q. Okay. We agree on that? 10:51
A. MR. HALL: So --
A. MR. MOLLARD: No. It's -- it's not -- you will get more energy. You're going to get 34 gigawatt hours; you're only paying for 24.
Q. Right.

A. MR. MOLLARD: So you pay 24 at 19 cents, but you get --

Q. Right.

A. MR. MOLLARD: -- 34.

A. MR. HALL: Yeah.

Q. Correct.

A. MR. MOLLARD: Yes.

Q. So mathematically -- mathematically, it's the same as -- you're saying you're paying 13.5 cents for 34 gigawatt hours on average or you're paying 19 cents for 24.18, and anything -- 10:51

A. MR. HALL: Yes.

Q. -- over that, you're not paying for?

Mathematically, it's the same thing.

A. MR. OSLER: Yes, mathematically, it's the same thing, although history and discussions of this nature have shown that everybody seems to walk away from the table with different understandings. Okay? So -- and we had this discussion from time to time with THELP. It's not the first time. 10:52

So we are paying, we have to pay for the 34 gigawatt hours on average, and we actually have to pay for whatever they deliver each year in the wintertime, which may be less or it may be more. So everybody in the room has to make sure they understand

that point, obviously.

What we're going to pay is 13 and a half cents for every kilowatt hour that they deliver, whether it's 34 or 32 or 36 or whatever the heck it is. We're going to pay 13 and a half cents. That's what the table is showing.

Q. Okay. That's the point of disconnection.

A. MR. OSLER: Sorry?

Q. That's where we're disconnecting, okay?

A. MR. OSLER: Okay. 10:52

Q. Like, I'm seeing the 4.594 million divided by the 34 gigawatt hours to get the price, all right, the 13.5.

A. MR. OSLER: Yeah.

Q. And the question behind it is, is if it -- instead of being 34, it was 48, would it be 4.594 divided by 48 gigawatt hours?

A. MR. OSLER: No. No, because --

Q. To arrive at the price?

A. MR. OSLER: Essentially -- essentially, the 10:53 **practical problem -- and I can recall a conversation a year or so ago very similar. Like, "Why can't we just -- why can't you -- we just pay for and deliver what you're actually going to use to displace thermal?" And we said, "Well, frankly, we can't run a utility**

that way. We're not going to be -- and you wouldn't necessarily like it, because you'd have to take the risk of when we had thermal requirements and everything else."

So if you look at the long-term average calculation of displaced energy, which I think, in this particular amended version was Figure 4 -- Figure 2.2-7 at page 7 of the Exhibit B-5. It shows you that during low water years we get a much higher level of thermal displacement, and in high water years, we hardly displace anything. And on long-term average, it's closer to the top than it is the bottom. 10:54

In other words, it depends -- it varies from year to year depending on what the conditions are on the Yukon Energy's YIS.

Sorry, am I stopping somebody from asking a question?

Q. Yeah.

MS. SABO: I was just going to say, give us a moment to pull that reference up, Mr. Osler, just in case we need to -- 10:54

A. MR. OSLER: Okay.

MS. SABO: -- anything.

Q. MR. WARD: One quick question for you, Mr. Osler. The thermal displacement that you calculate

or the thermal displacement benefits you calculate, that is based on long-term average, is it not?

A. **MR. OSLER: Exactly, but it means that over 38 years of YIS water data, the same as we'd use for a GRA, long-term average, okay, same process, if you break it down to try and understand what's going on, the five lowest water years or the five highest water years shows you how much difference there is within that time period in terms of displacing thermal from the 34 gigawatt hours that are -- you're on average getting.** 10:55

So it all depends on how the YIS operates in terms of where we are with the load, where we are with the water on that system, et cetera. And the long-term average is an average. It doesn't really tell me how I'm going to do the calculation each year. And if I had to go and do the calculation each year and only pay you -- only buy your energy when I can be -- use it to displace thermal, YEC would love that; but I don't think the other people would be able to get it bankrolled, because they wouldn't have any certainty as to cash flow. 10:56

Q. But having said that, Mr. Hall said -- again, I'm quoting the transcript -- that: (as read)

"You know, we'll pay for only the amount

of energy -- of thermal energy we can avoid generating."

A. MR. HALL: And that -- right. And I think that statement is true over the long term. If you look at the long-term average numbers, the statement's true.

A. MR. OSLER: And we've answered that question a few times in the IRs, because the application had a statement of principles on a couple of pages, and then it got into numbers. And we've noticed that people keep asking questions about the principles, and then 10:56
asking why the numbers, for example, to take your question right now, "Well, you're going to pay for some energy that isn't being valuable. Yes or no?"

And the answer is of course we're going to pay for some energy that isn't valuable. Because we cannot do a deal based on only buying the energy when we need it. We have to purchase -- have a purchase arrangement that picks up what they are going to supply us during the winter.

So our only solution to that problem, to honour 10:57
the principle, is to get a lower price per kilowatt hour that we're prepared to pay based on long-term averages. We're not paying 19 cents for every kilowatt hour we get. We're only paying 13 and a half during the first decade and about 9 cents or whatever --

9.7 cents after that. Because that's all we can afford to pay based on the information we have on average.

And the only other alternative we'd have to meet the principles would not be acceptable to THELP; namely, we will only pay you when we can (phonetic). That wouldn't provide them a basis to finance a capital-intensive hydro project.

Q. Thank you, Mr. Osler. We're not trying -- I'm not trying to be argumentative. I'm just trying to understand and reconcile, like, to the statement from -- 10:58

A. MR. OSLER: Yeah.

Q. -- from Mr. Hall and that, so... I'm still not quite comfortable with that, but I can check --

A. MR. OSLER: Okay.

Q. -- I can check the transcripts for your answer on that, so that's fine. Thank you.

A. MR. OSLER: Yeah. And -- and to the extent that we thought way back, in dealing with board of directors, other people that lay out the principles and then the mechanics, would perhaps help people to understand what -- how we'd approached it; but I can see that it also leads to some confusions, and we didn't intend that. I'll make that point clearly. 10:58

And the only other thing I'd say for the record is

that JM asked us a question about, "Well, what would happen if we'd had all this in place in 2022 when the load on the system was a bit different and we didn't have very many IPPs?" And the answer was a much higher price than you see here, because the IPPs are reducing the value of Atlin, effectively.

So to me that shows that the amount you can afford to pay is based on the assumptions that you see in Table 3-1, the one that you asked. And if we changed those assumptions, the price we can afford to pay changes. 10:59

So if those assumptions are wrong, that's a risk that the Minister is interested in understanding. Okay? And we tried to explain it that way.

MS. SABO QUESTIONS THE PANEL:

Q. MS. SABO: Thank you, sir. Mr. Hall, anything more on that area?

A. MR. HALL: No.

Q. Okay. Thank you.

MS. SABO: Mr. Chair, I have a few more questions, but I'm wondering if we can just take a quick break so everybody -- 10:59

THE CHAIR: Yes, sure.

MS. SABO: -- can have some time and come back in a few minutes?

THE CHAIR: 15 or --
MS. SABO: That's great.
THE CHAIR: All right. Let's adjourn for 15 minutes, and we'll be back at 11:15.
(ADJOURNMENT)
THE CHAIR: Okay. Thank you, everyone.
Ms. Sabo, has a few more -- a couple of more questions, I think, and then I think we'll break for lunch at that point and --
MS. SABO: Thank you, Mr. Chair. 11:19
MR. LANDRY: Mr. Chair, if I may -- excuse me, Ms. Sabo -- the exhibit that we talked about earlier has now been sent by email. So once Ms. Sabo or Ms. Lemke gets it, we can then formally mark it as an exhibit.
THE CHAIR: Yes, okay. And that would be B-17?
MS. SABO: And we have that exhibit now, Mr. Landry, so we can mark that now.
THE CHAIR: All right. So it's B-17? 11:20
MS. SABO: 16.
MR. LANDRY: I think it's 16.
THE CHAIR: Sorry, that's the Excel spreadsheet?
MR. LANDRY: Yeah, Excel spreadsheet.

THE CHAIR: Yes, yes. B --
MR. LANDRY: B-16.
THE CHAIR: Yeah, sorry, B-16. Great.
MR. LANDRY: Okay. Thank you.
EXHIBIT B-16 - EXCEL SPREADSHEET
PROVIDED IN RESPONSE TO UNDERTAKINGS
THE CHAIR: Okay. Proceed, Ms. Sabo.
MS. SABO: Thank you.
Q. Just one more question on that last line we were talking about before the break. 11:20

Given that YEC is receiving energy above thermal displaced energy under the EPA and -- as shown in Table 3, and if it does not require energy above thermal displacement, can you again help us out where the savings are to YEC's customers?

A. MR. OSLER: Let's try it this way: The record shows that in answers to IRs, that YEC has said that it displaces thermal energy through two different ways, direct displacement or through storage savings benefits. And when it does that, it saves 19 cents for 11:21 **every kilowatt hour that it purchased that managed to do that.**

The rest of the water that it's buying is going towards spillage and hydro on the YIS, and it has absolutely no value to YEC in terms of savings. The

record clearly shows those statements.

The third thing that it shows is that YEC is required to buy all of the energy that THELP provides at Jakes Corner, and the only way we can make sure that there is value for customers equal to what we're willing to pay is to calculate a lower number based on the estimates that you see in Table 3, A3. And, therefore, some of the energy we're buying is contributing more than 13 cents because it's actually displacing thermal and some of the energy we're buying is not contributing anything, doing zero, and the average comes out to be a fair and reasonable price for ratepayers to pay. 11:22

I think that's the only way to understand Table A3 and the statements of principle that have been made.

And Table A3 shows you that we've made an effort to adjust that price when it made sense to adjust it for load on the system. And we've explained that, and we've made it very clear that we're aware of the risk. We'd like to make sure the Minister is aware of the risks and what we're talking about. It's not -- there's no attempt here to not get at that. 11:23

But if we're going to buy thermal -- going to buy energy from a hydro facility through an IPP, we're not aware of any other approach we could take that would be

acceptable to the IPP people.

Q. Okay. Thank you, Mr. Osler.

I just had one housekeeping matter on your response this morning on Undertaking 2, the second undertaking you responded to this morning, that referred us, in part, to YUB-IR-29?

A. MR. OSLER: Right.

Q. Yeah, I think it's a fairly general question. If you want to turn that up, you can. What we're wondering is, is the climate data actual data for more than four years for Surprise Lake? 11:23

A. MR. OSLER: The climate data that they used, yes, is more -- it's for the time period of the full 1964 to 2020 that they quote in the answer. And it's for Surprise Lake per se, but it's also for the area around Surprise Lake, if you got into the detail. They look at both land and water. So --

Q. Great. Thank you, sir.

Subject to undertakings, YEC panel, thank you all individually for your time and for answering our questions today. 11:24

MS. SABO: Mr. Chairman, I'm assuming -- we usually take an hour and a half break for lunch, so that would take us to 1:00?

THE CHAIR: Yes, I think that would be

reasonable. It still allows us an hour and a half, and we just resume half an hour earlier than otherwise scheduled. So let's be back at 1:00.

MR. LANDRY: Mr. Chair, if I may, just before we break. I assume what is left, then, is the questions from the Panel, the Board, and then any redirect I might have?

THE CHAIR: That's correct.

MR. LANDRY: Thank you.

(PROCEEDINGS ADJOURNED AT 11:25 A.M.) 11:25

PROCEEDINGS ADJOURNED TO 1:00 P.M.

Volume 2
July 20, 2022
P.M. Session

(PROCEEDINGS RECOMMENCED AT 1:00 P.M.)

A. HALL, E. MOLLARD, C. OSLER (For Yukon Energy Corporation), previously affirmed

THE CHAIR: We are on. Okay. Welcome back, everyone.

At this point, we will move to questioning by members of the Board. Cross-examination. So we'll begin with --

THE COURT REPORTER: Excuse me, Mr. Chair. We're missing a couple of the witnesses.

THE CHAIR: Oh, in the panel, the YEC panel?

THE COURT REPORTER: Yes.

MR. LANDRY: Sorry, let me -- let me -- if I could just -- give a minute.

13:00

THE CHAIR: Round them up, Mr. Landry.

13:00

MR. LANDRY: I apologize for that, Mr. Chair.

THE CHAIR: We occasionally show a little indulgence for lateness, so not to worry.

All right. So we'll begin with the Board's questions, with Vice Chair Bonnie King.

MS. KING QUESTIONS THE PANEL:

Q. Good afternoon. I have a high-level question. So if you go to B-5, we're going back to Table A3 again. It's on 41, sorry, of 140 on the pdf, hard copy A3. Everybody is there?

A. MR. HALL: Yeah.

Q. Can you please provide the cost -- sorry -- the cost of energy, the 34 gigawatts in the capacity payment? I think it's 4.5 million plus 1.75 million, subject to check. 13:01

This is -- so the high-level question that I'm asking you to provide to us is: Using an average rate, including riders or a weighted average based on consumption by rate class, provide the approximate revenues that would be collected from the 34 gigawatt hours of consumed energy.

And I imagine that's an undertaking.

Using the numbers in that second amended EPA 2024 load forecast.

A. MR. MOLLARD: Mr. Chair, we're just kind of noodling around different approaches here. 13:02

So you want to see how much revenue we would get from that 34 gigawatt hours?

Q. Yes. An average rate, including riders or the weighted average based on consumption.

A. MR. MOLLARD: But we -- the challenge we have with that is we don't know where those electrons go, so whether they're used by a commercial customer or a residential customer or whether it gets wholesaled, I'm not sure how we'd start that.

Q. So in general. You can provide -- you can put whatever assumptions you're using in it.

A. MR. MOLLARD: But I don't even know what to assume.

Q. You can't calculate the revenue, an assumption? High level. We're asking for a high level, not a specific -- 13:03

A. MR. OSLER: Let's go --

Q. -- range.

A. MR. OSLER: -- step -- if we could go step by step -- it's Cam Osler.

Q. Mm-hm.

A. MR. OSLER: On page 27 of B-5, Exhibit B-5, there is a --

Q. Page 27. Just a minute. 13:04

A. MR. OSLER: Page 27.

Q. Okay.

A. MR. OSLER: There's a paragraph in the middle and a footnote, and it's talking about the first part of I think what you asked, which is how much would this

cost a year for 34 million kilowatt hours and the dependable capacity.

And the number that is shown would be 6.4 million in 2024 dollars to the end of 2034, and then it drops down to $5 million in 2024 dollars after that.

So that's the first step.

Q. Yes.

A. MR. OSLER: And you're asking to know how much that boils down to as an average cost per kilowatt hour for ratepayers. Is that what you're asking? 13:05

Q. That's right. So you can compare the numbers of what the revenue coming in would be to the expense.

A. MR. OSLER: Right.

Q. In general, high level.

A. MR. OSLER: Well, if the Board was doing a review, the Board would be given these costs; and if they had no reason to dispute them, they would go into the revenue requirement.

I would make a point right here that the idea is that if we didn't have Atlin, you would also be putting 13:05 **into the revenue requirement similar costs for thermal because we're a long-term average, we're displacing this much thermal, the same amount, and you'd be putting in something to handle the capacity.**

So the net effect on rates in terms of cents

per kilowatt hour, if every -- if all the assumptions are correct, the net effect is zero. It has no effect on the rates, unless something else happens to change it.

The actual amount, 6.4 million, the best we can do -- we could look at after the break -- would be to say the total revenue requirement for -- just approved for 2021 was such and such an amount. How much does 6.4 million represent in that total package, you know, divided by the number of kilowatt hours that are sold. 13:06

We could do that for you if it would help as a method of sort of assessing how big this is relative to everything else.

Q. Okay. If that's --

THE CHAIR: Yeah.

Q. MS. KING: -- if that's the best you can do to kind of pinpoint it, then that's --

THE CHAIR: Yeah, if you can treat it as an undertaking and, you know, put in whatever assumptions or qualifiers -- 13:06

A. MR. OSLER: All right.

THE CHAIR: -- you think would be appropriate to give a fair answer, that would be helpful.

A. MR. OSLER: And, Mr. Chairman, given your -- the direction about not going beyond the question, I

assume that in looking at it, it's useful for us to point out the net effect as well as the gross effect that -- you know, if we didn't have Atlin, we'd have to have something else. Is that useful to the Board?

Q. MS. KING: If you wanted to provide that additional information, that's fine, as long as it's clear.

A. MR. OSLER: Okay.

Q. So that we can still compare what we're looking for, and you can compare it to the alternative. 13:07

A. MR. OSLER: Okay. Thank you. We'll -- I presume we'll undertake that.

Q. Thank you.

UNDERTAKING - TO PROVIDE, USING AN AVERAGE RATE, INCLUDING RIDERS OR A WEIGHTED AVERAGE BASED ON CONSUMPTION BY RATE CLASS, PROVIDE THE APPROXIMATE REVENUES THAT WOULD BE COLLECTED FROM THE 34 GIGAWATT HOURS OF CONSUMED ENERGY (SEE TRANSCRIPT) 13:07

A. MR. HALL: That's good. Thank you.

THE CHAIR: Do you have anything further?

MS. KING: No.

THE CHAIR: Okay. Ms. Middler, have you got some questions?

MS. MIDDLER: Sure.

MS. MIDDLER QUESTIONS THE PANEL:

Q. Can you hear me?

A. MR. OSLER: Yes.

Q. Okay. So Exhibit B-5 is the clean amended EPA submission. So on page 12, it's talking about some key principles and load forecasting and forecast risk.

So under Number 6 on page 12, it says --

A. MR. MOLLARD: Sorry, Ms. Middler, are you in Exhibit B-5? 13:08

A. MR. OSLER: Yes, she's on page 12.

A. MR. MOLLARD: Pdf page 12.

Q. MS. MIDDLER: No, the paper copy.

A. MR. MOLLARD: Okay. All right. Got confused, my apologies.

Q. I'm sorry, I don't have the pdf page.

A. MR. MOLLARD: Okay. We're there.

Q. Okay. So it says: (as read)

"Both parties are exposed to forecast risk. If actual grid load is higher 13:08 than forecast, example, grid-connected mines remain longer in operation than forecast, then YEC benefits from the opportunity to procure Atlin energy at prices lower than would otherwise have

been determined. Conversely, if actual grid load is lower than forecast, example, grid-connected mines close earlier than expected, then payments by YEC to THELP will be higher than would otherwise have been the case."

And then under that, in Number 7, it's titled "Sharing the Benefit of Upside Opportunities," and it says that: (as read)

"The amended EPA allows THELP to share benefits with YEC under certain scenarios, which would be if the grid load were higher than forecast, THELP can get paid approximately two-thirds of Yukon Energy's added thermal displacement cost savings." 13:09

And (b): (as read)

"If a future carbon charge is approved through customer rates, THELP can get paid up to 50 percent of YEC's added cost saving from thermal displacement; and if YEC requests delivery of energy during the summer the months, YEC pays a discounted price equal to 50 percent of the last approved YUB blended fuel 13:10

price."

So I'm wondering if there are any sharing of upside opportunities to Yukon ratepayers such as what if for some reason the grid loads are lower than forecast, which, as you mentioned, would result in higher payments to THELP, was there a way negotiated to balance that to manage ratepayer risk?

A. MR. OSLER: Okay. So the one risk that ratepayers have flagged in your quote is if the load is lower than was assumed in the forecast for setting the energy price. 13:11

Q. Yes.

A. MR. OSLER: That's the risk for ratepayers. Everything else is a positive.

So the short answer is no, THELP would not accept a downside risk of that nature. When they were negotiating the energy price and the capacity price that would be paid for the basic deliveries, the focus of their attention was on a firm price that would not run a risk of being reduced except in the case of the test. Okay? 13:11

So given that that framework we adopted the 2035 price that you see, which was very conservative with no industrial load, YEC did not consider there was any real risk of a downside load by 2035 for the

non-industrial side. I mean -- in fact, people have asked us questions about why we kept the load in 2035 flat rather than acknowledging the non-industrial load would grow a bit. Mr. Maissan asked us some questions about that.

So the real risk that you're talking about exists between 2024 or 2025 now and the end of 2034, could there be a downside risk.

And my advice would be that it would boil down to, is there a real possibility that the mine loads could 13:12
vanish during that time period, which is Alexco and Victoria Gold, and we don't think that there is a real risk sort of thing. Everything we know at the moment, if anything, more likely the mine loads would continue rather than go down.

But, you know, for those who have been in Yukon a long time, risks for industrial load are what they are, and they could change, so that's a real risk, but it's not a risk that we perceive from -- based on the information that we have to be something of a concern 13:13
to Yukon Energy or to ratepayers. And, if anything, we think the assumptions we've made were very, very conservative relative to other options that could have been considered reasonably.

So, aside from that, all of the other risks that

you listed are upside risks. They don't expose the ratepayer to an extra cost. And we only negotiated those upsides later on in the deal when we everybody was trying to close this, that, the next thing. So it -- they weren't sort of on the table to start with, but people became aware that Yukon Energy might benefit, particularly given the 2035 price structure that we'd adopted. So they asked for opportunities to share if the opportunity went up. But that doesn't cost ratepayers anything in terms of what would have been the alternative -- 13:14

A. MR. MOLLARD: And just --

A. MR. OSLER: -- (indiscernible).

A. MR. MOLLARD: -- Ms. Middler, as far as the mechanics go of that, the actual ratepayers would get the benefit or share the pain of those impacts at the next GRA after we became aware of it.

So when we forecast out our test year for our GRA, we would have to forecast at that point what that -- for instance, what that load is; and depending on whether it was up or down, that would impact our revenue requirement, which then we would ask the Board to approve that impact to ratepayers, just from a process perspective. 13:14

A. MR. OSLER: And another way of saying that is

until we have a GRA approved, the actual risk is borne by YEC. You know, it only becomes a ratepayer risk when the Board has had a chance to review it and revise rates or change rates accordingly.

MS. MIDDLER: Can we get the audio boosted up in the room at all? It's my elderly ears. Thank you.

Q. Okay. Great. Moving on, then, to just getting a better understanding around the capacity payment and the capacity test and the excess payment. So as we've learned throughout the proceeding, that rather than 13:15
paying for actual capacity, YEC's paying for committed capacity, so that means paying for the capacity that THELP states it can provide during the peak winter period; that's correct?

A. MR. HALL: No, it's based on the outcome of the test.

Q. Right. Okay. And that's determined --

A. MR. HALL: It's not what they claim, it's what they have demonstrated.

Q. Right. So they've determined that by the dependable 13:15
capacity test. So I'm curious about what --

A. MR. HALL: Right.

Q. -- that looks like. So it's like they -- they turn it wide open, maximum output for a 24-hour period; is that how --

A. MR. HALL: Yeah, and then -- I think Mr. Osler went through that yesterday in terms of the -- the detail of how that 24-hour test is performed, but yes.

Q. Maximum output for 24 hours. And can --

A. MR. HALL: It's --

Q. -- you sustain it?

A. MR. HALL: -- the average.

A. MR. OSLER: It is -- I went through the definition on page A1-49 of Exhibit B-5, and it is the average over 24 hours, continuous 24 hours, of what they've -- what they've produced divided by 24, you know. So it isn't spontaneous; it isn't just the maximum. They have to show that it's sustained continuously on average over 24 hours in the month of December. 13:16

Q. Okay. So, at that point, the energy electrons and the capacity electrons are looking like the same thing at the point of interconnection?

A. MR. HALL: Well, the energy electrons are electrons. Capacity is just the amount of megawatts. 13:17

Q. Okay.

A. MR. HALL: Yeah.

Q. So -- but how will you know whether the capacity committed is delivered or not?

A. MR. HALL: So there's a calculation we would do after the fact, which Mr. Osler can review again.

A. MR. OSLER: So, again, on the same page, there's a definition called "Dependable Capacity Provided." It's Definition 1.50 on that page.

So you can look at it after, but it's essentially the same methodology extended over the peak winter period. How much energy did they deliver during the time periods when we required them to deliver peak capacity. They're not asked to deliver peak capacity all the time, but we have -- under the operating rules, we have the ability to tell them each week whether we -- what hours we want the peak capacity at. 13:17

So having told them that, we have a record of when they were supposed to deliver peak capacity. We measure how much they actually delivered during all of those hours when they were required, and we divide it by the total number of hours, and that is the average that they actually provided.

And there's an example attached to both the EPA and the exhibit that shows some of this stuff if you want to go there, but that's basically the method. How much did they actually deliver when it was required divided by the number of hours that they were required to deliver the maximum. 13:18

Q. So yesterday you said it would be rare, but what would -- what could be the potential causes for an under-delivery of committed capacity?

A. MR. HALL: It would be something that, after the test, somehow derated the plant. I mean, in the worst case, it's a complete failure. So if something failed in the plant, you know, after the December test was complete.

So, you know, a failure of some piece of equipment would -- would certainly put them offside, or converse, you know, something that allows a situation where they can still operate, but only at a sort of derated -- a derated manner. Hard to think what that would be. 13:19

Some kind of ice -- you know, ice problem perhaps. But, I mean, we're a lot more confident about ice because there's no longer a power canal.

A. MR. OSLER: So I think -- I think at one level anybody's imagination is as good as the next person's about what could go wrong with a plant. The bottom line is something could always go wrong and there could be a problem. 13:20

Aside from that, which is very rare for -- based on Yukon Energy experience with hydro plants and stuff like that. That's not something anybody really expects to be a problem during the peak winter period.

Before we had the penstock when these rules were originally written, we had a material concern about ice formations and log -- and jams in the power canal that could have disrupted the ability to deliver when we wanted it during the peak winter period. So there were a whole bunch of risks that we talked about that were related to the power canal. The penstock, we believe, has removed all of that risk. So these rules were developed earlier in the context of something that had a lot more risk associated with it. 13:21

I'm not aware of any other types of risk that -- I mean, we're not worried about the risk of not having enough water. That was assessed separately.

Could something go wrong with the control structure that puts the water into the penstock? Could something jam that or hurt it? I mean, those are theoretical opportunities for something to go wrong. Could there be a climate or severe event, earthquake or whatever, that disrupted something? Anything you -- your imagination can add would lead to them not being able to deliver what they were -- committed to deliver during a peak winter period. 13:21

Q. What about water availability? You say that's considered elsewhere?

A. MR. OSLER: Yes. Effectively, put -- Table A1

in Appendix A is the sort of summary of the information we were provided by THELP of water availability over the simulated period of their modelling, 51 years. And then Table A2 discussed how Yukon Energy would probably control the dispatching of that.

There's also a clause in the EPA, clause 7.2, that says they will -- that under this EPA, they won't make any changes if it was to reduce the amount of delivered energy we'd get during the peak winter period below certain numbers. 13:22

Our -- our biggest concern with respect to making sure they provide the energy that we want, that they have enough water, was related to the peak winter period and the dependable capacity. So their modelling was showing that they could -- they could provide us with 14 million kilowatt hours during that time period of energy, and that was under a very, very wide range of circumstances and conditions, including not even having the reservoir full at the beginning of the peak winter -- at the beginning of the winter period. And 13:23 also under certain conditions of even some load growth higher than what we'd assumed at Atlin.

With 14 million kilowatt hours of delivered energy, that's when we had the 85 percent of all the peak winter period days that we could actually

deliver -- have enough water to deliver peak winter -- peak capacity, and that was far more than the 20 days we needed out of that time period.

So that was our test, that was our concern, and those were the answers that we got. So when we had the penstock, we really started to relax completely about the issue of dependable capacity, having enough water.

Before we had the penstock, we had material concerns that did we have enough water to deal with freezes in the canal or other disruptions that might occur. And we were satisfied we did, but it was a lot different assessment process than once we had the penstock. We were very relaxed once we had the penstock on that issue. 13:24

On energy, I think I've testified that if we don't get the energy per se, leaving aside dependable capacity, if we don't get the energy, we will be replacing thermal. We're not worried about security of supply, and we're not really worried about the impact on rates because the two are supposed to be reasonably similar. 13:24

Our concern was focused on dependable capacity, making sure there was more than enough water available to deliver dependable capacity during the peak winter period for the days below minus 30.

Q. Thank you. So back to the potential under-delivery of committed capacity, how, then, would you calculate the overpayment or the excess payment?

A. MR. HALL: How would we calculate --

A. MR. OSLER: Section 8.3 of the EPA itself is the section that addresses it if you want to look at it later.

Q. Okay, and --

A. MR. OSLER: But --

Q. -- that talks about how -- is that about the recoup mechanism, or that is how it's calculated or both? 13:25

A. MR. OSLER: It's a combination. But, effectively, at the end of each peak winter period, you calculate what capacity you paid for. In other words, how much did you pay divided by the price per kilowatt for that year, and that was how much you paid for it, how many megawatts.

You then do the test that I read out the definition of: How much did you actually provide when it was needed divided by the number of hours? What was the average megawatt that you actually provided? And if there was less megawatts provided than was paid for, you take the ratio of what the shortage is compared to how much you paid, and that's how much goes into the account to be recovered. 13:26

In other words, if you paid a $100,000, just as an example, and you only delivered 90 percent of what you paid for. 10 percent of that $100,000 would go into the account to be recovered in due course.

Q. Okay. And about that recovery, it says that any such shortfall would be recovered from potential future payments to THELP --

A. MR. OSLER: Right.

Q. -- which would begin at 2035, and -- or, before that, from summer energy requested? 13:27

A. MR. OSLER: Yeah, there are three ways it can be recovered. If there is any --

Q. Those are the future opportunities that we discussed --

A. MR. OSLER: Right.

Q. -- earlier?

A. MR. OSLER: Yeah. If YEC had a requirement to get summer energy any time, and that would only occur if they were otherwise going to be burning some thermal, then the price YEC would pay for it is 50 percent of the then YUB price. 13:27

But half of what YEC would otherwise pay to them would be used to offset any dependable capacity, a shortfall amount that was existing at that time. So THELP would only get 25 percent of the peak winter -- of the Yukon Energy approved blend fuel price for

summer delivery.

I don't think summer deliveries are very likely, so I'm not suggesting that you want to rely on that for recovery, but that's a mechanism that's there.

If the government's put in a carbon tax again, then all of the carbon tax saving that THELP could get, all of it would be ascribed first to pay down the dependable capacity shortfall, and THELP wouldn't get paid anything until the shortfall was fully paid off. That could occur before 2034 or '35, but it -- there's 13:28
nothing locked down right now for utilities in the north to be paying carbon tax.

Then you get to 2035, and if they're -- if mine loads are still around, there will be additional load. There will be a calculation of how much we would otherwise pay them for the added payment, additional payment. And all of that would be used, first, to come down, reduce the excess -- the dependable capacity that we'd overpaid.

That one has a reasonably strong possibility of 13:29
being a pretty reasonable way to recover if there still are shortfalls by that time, because it's quite likely there will be industrial load rather than no industrial load. We just don't have certainty.

And going back, we put this in place conceptually

when we were much more concerned about reliability of the power canal. Really, for all the time and thought we keep putting into it today, we do not think there's a very big possibility or probability, I guess is a better way to put it, of a big dependable capacity problem surfacing unless somebody had some type of a disaster or some other type of situation that nobody really likes.

So it's not like we're losing a lot of sleep about it's going to happen with the penstock. The penstock made a big difference. 13:30

Q. And a technical question around that: Like, the air is still as cold. What is -- is it the minimum flows that change the icing issues --

A. MR. OSLER: Right.

Q. -- on a penstock via -- versus a power canal?

A. MR. OSLER: At as simple a level as I can deal with it, yes. It's -- it's, first of all, that it's completely controllable. It isn't sort of going along a canal where it could leak out or it could do this or could do that. 13:30

Secondly, you'll notice that we have a minimum requirement to -- we don't want the power to at least have 1 megawatt roughly being useable of water going down the penstock. So that means during the coldest

part of the winter you don't want the water just sitting in the penstock, you do want it moving a bit. But you can control that water completely compared to when we had the power canal when they said, no, we'd have to take three days before we changed the flow in the power canal. So you'd lose several days of water every time you wanted to change something.

So -- and the other thing they're going to do is they're going to take a tap off that penstock three quarters of the way down and use the water for their existing plant. So even if we don't want any water, they're going to be moving water through that penstock to keep their own plant going. 13:31

So all of those things give you comfort, from my point of view, that, no, we're not worrying anymore about issues within that passageway between Surprise Lake and the power plants in terms of ice formation, frazil ice, ice block jams that occur that suddenly stop everything. All of those things are no longer -- we're told by the engineers and people who advise us that they're not issues that we should be concerned about. 13:32

Q. Okay. That's good to know, and it's reassuring because the way that the mechanism is set up, it looks like a potential overpayment for capacity. I mean, it could

potentially not be recouped if these potential upside benefits --

A. MR. OSLER: Right.

Q. -- in the future don't materialize or something like that. And initially you had said that the energy and the capacity are kind of two separate accounts, so I was confused about why an under-delivery of something on the capacity side wasn't just taken away from the capacity side, but I understand that you've repeatedly said that THELP needed some security and no sort of removals from that certain revenue that it's going to earn from this project to get it financed. 13:32

A. MR. OSLER: Yes. And I think I've also made the point that it wasn't -- it wasn't something that was resolved in a five-minute meeting. It went on for months in terms of a discussion -- before we had a penstock, when we had concerns about under-delivery -- and obviously they did too, otherwise they wouldn't have argued about it for so long. But later on when we amended the EPA, we already had all these things in place, and we weren't going to get rid of them at all, but our level of concern had changed dramatically. 13:33

Q. Okay. In Exhibit B-5, B14, I don't know what that is in the pdf, it's talking about the excess payment, and it said: (as read)

"A positive balance in this account means that the buyer is paid for less dependable capacity committed than the seller has delivered."

So how would that happen, and how is that positive balance reimbursed to the seller?

A. MR. OSLER: Where is that?

Q. Appendix --

UNIDENTIFIED SPEAKER: Pdf 62.

A. MR. OSLER: Oh, Appendix B. Did you say Appendix B? 13:34

Q. It is in Appendix B, B14.

A. MR. OSLER: Yeah. Okay, sorry. And you're in the second-last paragraph on that page?

Q. Yeah, that starts with: (as read)

"The dependable capacity excess payment account. See Section 8.3. The amended EPA will record the amount of dependable plant capacity seller has provided."

The last sentence talks about what the negative balance means and what the positive balance means, and I'm just wondering how there could be a positive balance, meaning the buyer has paid less than what the dependable capacity committed. 13:34

A. MR. OSLER: Okay. Well, it's a good question,

and they wanted to make sure that if we were going to get the -- get the benefit of -- one way around, that they wanted to make sure that somehow or other they managed to get this situation that it would be taken into account.

The only way I could imagine it could occur is a dependable capacity test result that was less than their full capability, and then later on, during the peak winter period, they managed to deliver more than the dependable capacity test had shown. They wouldn't 13:35 get paid any more then, but it would go as a credit against other things that they hadn't met to date, if you follow me.

In other words, let's say the dependable capacity test for some reason or other, they could only get 8 megawatts during December.

Q. Okay.

A. MR. OSLER: So they only got paid for 8 megawatts for that year's peak winter period. But let's say they fixed whatever the problem was in 13:35 January and they were able to deliver 8.75 during January when we wanted it. We would take that into account when we did the -- how much did they actually provide us. We would not pay them the extra, but we would put it against their account for their deficits

when they weren't recovering -- when they weren't -- they weren't delivering what we had -- what they had promised or what they had committed to.

That's the only example I could think of of the way in which that could occur, that event.

Q. Okay.

THE CHAIR: We're just going to pause for a moment. Jeff, could you mute us, please?

(DISCUSSION OFF THE RECORD)

Q. MS. MIDDLER: We talked a little bit about the change in the project configuration, which was partly the reason why there was an amended EPA, the penstock replacing the idea of -- the concept of power canal. So it seems like that has also changed the operating rules and no longer requires the steady state operation of the project. 13:43

And it looks like -- I'm wondering, does this mean that these sort of added communications between the utility and THELP's utility to -- can allow for the project to be a little bit more load following? 13:43

A. MR. HALL: Yeah, that's correct. It's much more flexible than it was with a power canal. So we can dispatch basically -- we have commitments to buy the full quantity of water over the season, and there's a mechanism by which that's tracked; but we can -- if

we see cold weather coming, we have the ability to -- to, essentially, dispatch, yeah. There's a limitation on how many increases and decreases you can ask for in a day, so we're not phoning them up every hour, for example; right?

A. MR. OSLER: But the big -- the big shift as to why we couldn't do that before was the concern about problems in the power canal led to the conclusion that they have to keep the water moving through the canal at -- at least at 65 percent of capacity. That was the lowest they could go. If they went much lower than that, they were worried about creating icing conditions that would cause trouble, especially when they ramped back up. And that's not uncommon in terms of a procedural issue. So we could only operate between 65 and 100 percent, and we had to give three days' notice for any change. 13:44

So when we say it got a lot more flexible and adaptable, it's sort of hard to imagine the degree of change that took place, where you could make a -- for the next day, you could make a change. You could book it by week; you could change it up and down a couple of times during the day as part of the plan. And you could go as low as 1 megawatt or, you know, about 11 percent of the capacity if you were not needing the 13:45

power. You didn't have to shut it -- you couldn't shut it down, but you didn't have to run 65 percent of the water down the canal. You could just -- could lower it to as low as 1, 1 percent -- 11 percent, 1 megawatt.

So I'm trying to summarize, but there was a lot of change in the flexibility of operation because of the penstock.

Q. Okay. I want to move to something that was briefly discussed yesterday on the transcript, page 129, starting on line 9. 13:46

A. MR. MOLLARD: Sorry, Ms. Middler, what page number, please?

A. MR. OSLER: 129.

Q. Yeah, 129, starting on line 9. Mr. Osler says: (as read)

"The Pine Creek document..."

And he is referring to the Pine Creek EPA:

"The Pine Creek document I think THELP understood was confidential. And certainly we've never really studied it 14:33 carefully, but it became available to us because it was filed with the BCUC. It was on the record.

So in all fairness, it wasn't a document in front of the parties and it

wasn't -- I've never read it, for example. I've never looked at it."

So I'm wondering if you could provide some details on when you became aware that this agreement was in the public realm.

A. MR. OSLER: I can't from recollection. We could go back and try and figure out when we got it. Yeah.

Q. So it was -- it was an IR response YUB-YEC-1-8.

A. MR. OSLER: Yeah. 13:47

Q. On March 9. And I'm curious as to whether you were curious of what it contained?

A. MR. OSLER: Well, I think our lawyer read it. They were the ones that uncovered it before we had the IR. And they never raised anything coming out of it for us to pay attention to, but it -- it wasn't -- what I was trying to transmit is that it was a document that I think our lawyer was prompted out of curiosity, because we weren't being offered the document.

Nobody was suggesting that they were going to give 13:48 **it to us. He works in Vancouver, and he just, out of curiosity, went on the BCUC website because he thought maybe it would be there, and it was. And he told us about it and we got a copy of it, but it wasn't a focus of our discussions. I think he probably read it, but I**

could ask him.

Q. I think that -- I mean, I would have thought -- it's a seller. They already are involved in this kind of arrangement with another utility. I would have thought that might have been an interesting starting point.

But there is one marked difference in the two EPAs, is the CPI rate. In the Atlin EPA we're looking at, 50 percent CPI applied to both energy and capacity, whereas in the Pine Creek EPA, which granted only -- covers energy, it used a 12.5 percent of CPI rate. 13:49

So I'm just wondering if there was a missed opportunity in not having that as a starting point in negotiations?

A. MR. HALL: I mean, it's an interesting question, and I think we went through yesterday that the benchmarking to 50 percent of CPI was consistent with the Standing Offer Program inflation model on energy. I mean, I think, you know -- and I -- Ms. Middler, I haven't read the Pine Creek EPA. I mean, I think you -- it's a different system, right. 13:49 **You're talking about displacing thermal on a thermal micro grid, right, in Atlin, which is quite different to our EPA, where you're displacing thermal on a hydro -- predominantly a hydro grid.**

And so the level of complexity, I would -- I would

guess in our -- in terms of how price is calculated, for example, in our EPA would be substantially different from the Pine Creek deal, which is probably way more straightforward in terms of the way price is calculated.

Q. Fair.

MS. MIDDLER: Thank you.

THE CHAIR: You're all done?

MS. MIDDLER: Yes.

THE CHAIR: Okay. Ms. McCullough, do you have some questions for the panel? 13:50

MS. MCCULLOUGH: Yes, I do. Just a few, thank you, Mr. Chair.

MS. MCCULLOUGH QUESTIONS THE PANEL:

Q. So, first of all, thank you very much for some of the explanation that we've just had. I can't say yet whether it has clarified matters for me or not, but I can say that I'll certainly be reading the transcripts very carefully.

Okay. So the first -- I have some questions that I think may be fairly easy to answer. 13:51

The first thing that I wanted to ask was, we discussed First Nation consultation yesterday, and I appreciate that amongst the buyer and seller, the seller has taken on the responsibility. But I would

like to turn to Exhibit B-10, pdf 94 of 125, and I think it's YUB-1-20 in the IRs, and specifically Question (e) there.

So just let me know when you have that?

A. MR. OSLER: **1-20?**

A. MR. MOLLARD: **Yes.**

A. MR. HALL: **Okay. Got it.**

MS. SABO: 1-20, the pdf version?

Q. MS. MCCULLOUGH: So 1-20(e). So the question: (as read)

"What First Nation settlement lands and traditional territories would be affected by the Atlin-Jakes Corner infrastructure, and what is the extent of consultation/accommodation to date?" 13:52

And so in respect of the response, (e), the second paragraph -- rather, the first paragraph: (as read)

"The THELP owned and developed project facilities in Yukon between the BC-Yukon border and Jakes Corner are in the traditional territory of Carcross Tagish First Nation but do not affect any First Nation settlement lands." 13:52

I appreciate that answer. It doesn't speak to whether

or not there are any other overlapping Yukon First Nation claims into that area?

A. MR. HALL: Not as far as we're aware, no.

Q. Okay. And are you aware of any potential trans-boundary claims into that area beyond that of the Taku River Tlingit?

A. MR. HALL: Well, I think you've pointed out that the Taku River Tlingit have a trans-boundary claim into Yukon.

Q. Certainly. 13:53

A. MR. HALL: I don't know whether it extends to this area.

Q. I --

A. MR. HALL: But, I mean, presumably we -- they haven't -- it's the Taku River Tlingit, so it's their project. So, you know, it's never come up as an issue, but --

Q. And I do --

A. MR. HALL: -- CTFN have --

Q. -- I do -- sorry -- 13:54

A. MR. HALL: Sorry?

Q. I'm sorry, I do appreciate that. Sorry for interrupting you. I was actually interested in whether there was any awareness of potential claims from either the Tahltan, it's a little difficult to see on the

Federal Government's maps exactly how far their claim goes into the Yukon and whether there's an overlap, and also, I guess, potentially, perhaps unlikely, but potentially the Acho Dene Koe could have a trans-boundary claim that extended that far.

So I just wondered if there was any kind of awareness of that, understanding that TRT is responsible for the consultation.

A. MR. HALL: We're not aware that either of those First Nations have -- 13:54

Q. Thank --

A. -- MR. HALL: -- come forward with an assertion related to this project.

Q. Okay. Thank you. I'd like to turn, then, to the actual EPA agreement, and I'm looking at the amended EPA, but I think it's the same in both; and particularly Article 11, which deals with First Nation claims. And specifically 11.2 and 11.2(b), which says that: (as read)

"The buyer receives/obtains evidence or becomes aware of a First Nation claim, it may direct seller, at seller's cost, to, '(b), take any measures seller deems necessary to address, prevent, mitigate, compensate, or otherwise accommodate any 13:55

potential impacts provided the measures
are consented to in advance by buyer and
the First Nations making the
First Nation claim."

So I would just say it's any measures that the seller deems necessary, but not all that they deem necessary, but it's only those that they deem necessary and the buyer and the First Nation agree to.

So I was wondering, what type of measures that were being contemplated that all three parties had already agreed to? Beyond further negotiation processes. 13:56

A. MR. HALL: Sorry, can you just repeat the question in terms of the last part about all three parties need agreement?

Q. Well, it -- I guess I see -- the clause, it's a bit confusing. It says: (as read)

"Take any measures seller deems
necessary to address, prevent, mitigate,
compensate, or otherwise accommodate any
potential impacts provided the measures 13:57
are consented to in advance by buyer and
the First Nations making the
First Nation claim."

So basically, I guess, I'm reading (b) as saying whatever the three parties, being the claimant

First Nation, the buyer, and the seller, agrees to.

A. MR. HALL: Right.

Q. (b) is just saying --

A. MR. HALL: So everyone has to agree. Yeah.

Q. Yeah. (b) is just saying that -- that the seller will pay for those; is that correct?

A. MR. HALL: Well, it's not about payment. I mean, I guess the seller deems them necessary. So, I mean, that puts the onus on the seller to develop a deal; right? And then -- 13:57

Q. I get that --

A. MS. HALL: -- and ultimately the buyer -- ultimately the buyer has to consent to them.

Q. I guess I just meant because it has to be consented to in advance. So -- but it would be eventually at seller's cost; correct?

A. MR. HALL: That's right. At seller's cost is in the opening part of 11.2, yeah.

Q. Okay. So I guess I'm wondering what type of measures you're thinking would be anticipated that you, as buyer, would agree to in advance? 13:58

A. MR. HALL: Well, typically -- well, I mean, a claim, it's a bit of speculation what the claim is, but the -- sometimes these things are settled through an impact-benefit agreement, for example. So the measures

would be whatever items are in that package.

Q. So you would say -- in the case like that, if it was an impact-benefit agreement, you would say -- the seller would say, "Listen, outstanding claim. This is how we like to approach it." You would then say, "Okay, that type of approach is correct to us." The seller would then take it from there?

A. MR. HALL: Yeah.

Q. Okay. I think I understand that.

I wanted to ask about 11.3, which was about seller termination for First Nation claim and sort of the timing. 13:59

So if a First Nation claim is brought but it's not prior to buyer's COD, what is the remedy for any -- any measures that the buyer may then -- like, if there are any measures that the buyer has to -- sorry, I'm not articulating that well.

But what I would say is, if there are -- a claim is brought subsequent to buyer's COD and there are any costs to the buyer as a result of that claim, are the damages limited to those in respect of the system upgrade costs? 14:00

A. MR. OSLER: So just -- these are, I gather, clauses that come from some other agreements. They weren't something we spent a lot of time on. But if

this occurred under 11.3, it would be before the buyer's COD. So the plant will not start operating until both the buyer's COD and the seller's COD have occurred. Okay?

So we're talking about a situation where hypothetically the project has perhaps gotten under construction --

Q. Mm-hm.

A. MR. OSLER: -- people have been incurring costs, including the buyer has been incurring system -- systems upgrades, and then along come claimants proven in court. 14:01

Q. Right.

A. MR. OSLER: Which, reading this clause, provides an opportunity that the seller might terminate the whole EPA.

So if that occurred, we wouldn't be operating yet, and the seller has decided that this is such a severe thing they're going to terminate everything, so the rest of the clause is then focusing on making sure that 14:01 the buyer is reimbursed for costs that they might have incurred in good faith up to that point in time.

So it's a series of hypotheticals ultimately protecting the buyer to get recovered costs and allowing the seller the right to terminate under this

particular situation.

Q. But the buyer --

A. MR. OSLER: If it occurs before buyer's COD. This clause has no operation if the buyer's COD has already occurred.

Q. But the buyer would only get their actual costs connected with their actual costs related to the system upgrades, and would not get their costs for, for example, negotiation, consultation -- for consultants, et cetera? 14:02

A. MR. OSLER: You're correct. The buyer would get costs for what the agreement provides for, which is only for system upgrades or other specific costs related to that, including consultation by ATCO or something. But it -- there's no provision in the EPA for the buyer to be -- to receive funding from the seller for negotiation costs or for the cost of this hearing.

Q. Right. So I'd like, if we could, just go to page 23, I think of the transcript yesterday, and -- let's see. 14:03
And, Mr. Hall, it's your opening statement, and your final paragraphs, at line 4, it says:

> "And finally, the project execution model, which involves an independent project owned and operated by an

Indigenous-owned corporation, represents one of the key project development models that we see being used going forward to achieve reconciliation, meaningful participation of First Nations in Yukon's energy future, and the economic and social advancement of Indigenous peoples in Canada, British Columbia, and Yukon."

So I do understand the para -- you're talking about the project execution model, but I guess I'm also interested if you're also seeing the EPA in this case as a model or precedent for agreements with Yukon First Nations? 14:04

A. MR. HALL: That's a good question. I think, you know, these EPAs end up being, to some degree, case specific. They -- they relate, particularly the pricing terms, to the nature of the project, whether it, for example, produces both energy and dependable capacity.

Q. Mm-hm. 14:04

A. MR. HALL: So there's an element of this that's fairly unique to hydro versus let's say a First Nation developed a wind project or a solar project.

Q. Mm-hm.

A. MR. HALL: They would look different at that level. I think there are -- there are certain terms in here that we've -- I think we've been clear on this -- you know, borrowed from other prior templates, agreements, whether they be the Standing Offer Program, EPA template or, you know, templates of EPAs in British Columbia. So those kinds of terms would -- would tend to be replicated, because there's no reason to change them.

But I -- but I think that there's always going to be a degree of customization. I think in -- we were thinking more, like, sort of the business-level comment rather than this EPA as a template. 14:05

Q. Okay. Thank you. And I just have one more question, which is also from the transcript, I think page 35 -- sorry, page 36, right at the top, line 1. Mr. Maissan ask you then:

"Was this project then an unsolicited proposal?"

And the response being: 14:06

"Yes, in effect, it was."

And I just wondered, to the extent you can tell me, if you have had other unsolicited proposals from Yukon First Nations?

A. MR. HALL: I can't recall that we have. Most

of the First Nation activity in energy has been in -- within the Standing Offer Program, so we've had development corporations be -- either develop projects themselves --

Q. Right.

A. MR. HALL: -- or be partners on a standing offer project.

Q. Okay. Thank you.

MS. MCCULLOUGH: Those are my questions.

THE CHAIR: Thank you, Ms. McCullough. 14:06

THE CHAIR QUESTIONS THE PANEL:

Q. Actually, just following on that last question -- and I'll begin my questions with you, Mr. Hall -- just to get it fully clear, if I understand your evidence, is that YEC had no prior involvement or discussions with THELP or the TRT regarding the possibility of them expanding their hydro facility and then selling energy generated by that to YEC? In other words, if I understand your evidence correctly, it was a total cold call from TRT or THELP to YEC. Is that -- is that the 14:07 case?

A. MR. HALL: No, I wouldn't say it was a cold call, Mr. Chair. I think Mr. Osler yesterday mentioned that there had been some early conversations that went back several years, but I wouldn't say that they were

particularly serious. And -- and THELP, of their own accord, completed quite a bit of work and secured federal funding to support that work to do the pre-feasibility studies, the environmental assessment work before they -- we ever got serious about a conversation.

And so, you know, they had a vision of developing this expansion project, and they were prepared to do the heavy lifting and raise the money to advance it to a point where we could take it seriously. 14:08

And so I would say the communications between the two entities really ramped up following our release of the ten-year renewable plan, where we -- we started, you know, identifying this as a real option that looked interesting compared to others. And that related, you know, in large part because THELP had done a lot of work already, and so they were way ahead of, you know, other hydro projects that we might look at that would be starting from scratch.

Q. Okay. And would it be fair to say that absent YEC, THELP wouldn't really have any other possible customer to go to to sell the additional 8 or 8.75 megawatts that their plans would give rise to? 14:09

A. MR. HALL: Yeah, that's fair.

Q. Okay. Now, bear with me. I'm just jumping from one

spot to another.

You mentioned something in your evidence yesterday, and I just -- I wanted to get this sort of fleshed out a bit. And I'm referring to the transcript from the hearing yesterday at pdf page 50. And you were speaking about the BESS project, the battery storage project, being in the works and site preparation and so on.

Then you mentioned in the -- at line 17, you stated: 14:10

"I mean, we have seen some interesting developments in the battery market around lead times for delivery, but I think right now, you know, nothing material in terms of risk has transpired in that project."

Could I ask you just to explain what you meant by "interesting developments" in relation to lead times and what the underlining meaning is?

A. MR. HALL: Certainly. I think, as everyone knows, you know, we've seen strong growth in demand for lithium ion batteries from electric vehicles and also storage projects such as ours, but I think that the market dynamics are being driven by what's going on in the vehicle market. We've seen the price, you know -- 14:11

the price of lithium increase a lot, supply constraints, supply chain, you know, questions about supply of lithium. You know, you've got Elon Musk dreaming about actually buying up the supply chain and buying lithium mines, so I think there's a lot of -- a lot of things have gone on.

What that really boils down to is a slip-out in the delivery of the battery, and so that's really the material impact that we've seen. I don't think it, at the end of the day, affects the project financially necessarily, but it -- but, you know, I think we're looking at a slip in the inservice date from what we had originally envisioned. 14:12

Q. Have you got a rough idea --

A. MR. HALL: And so --

Q. -- rough idea how far out that service date might be pushed?

A. MR. HALL: Yeah, I'm just getting my years right. It's -- it's slipping into 2023. I think we're looking at sort of mid-2023 at this time. 14:12

Q. Okay.

A. MR. HALL: Yeah, Q2, Q3.

Q. Okay. Provided Mr. Musk doesn't send another rocket into space, a lithium-ion-powered rocket or something of the sort.

Now, another thing you mentioned as well a little further down in the transcript, I think you spoke about possible delays in the Moon Lake project, possibly around 2028-2029.

What's going on in that regard? Is that due to regulatory issues or whatever in British Columbia that might slow that project down?

A. MR. HALL: No, I think it's -- it's driven by two things. The first being -- and then I think I spoke about this yesterday -- just around the 14:13
engagement with Carcross Tagish First Nation. Just, you know, the practical reality of them -- you know, they've got a number of things on their plate right now, and what we've recently put on their plate is the re-licensing of the Whitehorse hydro facility. And that's a major piece of work.

And, you know, our experience on the ground has been that they just have limited capacity to deal with multiple projects at once, and so they -- they very much wanted to focus on other things rather than Moon. 14:14
And so that's just made it slow. I think we'll get there eventually with them, it's just we've got a couple of things to square away first.

And then also, I mean, related to this project, there's a piece of negotiation between THELP and CTFN

that needs to get done related to this project. So I think it's just a practical reality of Yukon First Nations are small. They have a finite capacity to work on complex projects. So that's the first one that I spoke about.

And then the second one was we really would like to secure federal funding to support the Moon project, and the fund that wasn't -- announced in a prior federal budget that -- that had been earmarked for Moon hasn't actually been launched by the federal department 14:15
responsible, and so the application process to secure that money just hasn't been completed. And so we -- rather than put ratepayer funds at risk, you know, I think our choice would be to wait and try and get that federal funding in place.

Q. Okay. Thank you. Now, referring to Exhibit B-10, which Ms. McCullough was referring to earlier, and I'm looking, in particular, at page 95 of the pdf version of B-10, at line 19 there, it says: (as read)

"THELP is responsible for consultation/accommodation related to the project." 14:16

Could you please explain to us where -- from where does THELP's responsibility to consult arise?

A. MR. HALL: Well, it arises, you know, partly

out of the YESAB process, and the piece of the transmission line that is within Yukon was subject to a YESAB review at the DO level. And, as part of that, there's a requirement for the proponents, the project owner, which is THELP, to -- to engage with affected First Nations, which would include Carcross Tagish First Nation, because there's a piece of the transmission line, a fairly small piece, that is within their traditional -- CTFN traditional territory. So it arises out of the *YESAA*, the obligations of a proponent under YESAB. 14:17

Q. Okay. So that -- if I take your meaning, then, it was an element of YESAB's order or direction that -- that THELP consult with CTFN?

A. MR. HALL: It's not a -- it arises out of the YESAB construct. It's not an order from *YESAA*, it's just a requirement. Like, if Yukon Energy does any -- if any proponent, you know, develops a project that is assessed by YESAB, there's a requirement to do this. You need -- 14:17

A. MR. OSLER: Consultation.

A. MR. HALL: Just to consult. Yeah.

Q. Fair enough. I guess I'm looking at it through the lens of, you know, sort of the general law around Indigenous consultation and arising out of the honour

of the Crown. So when I saw that response in the IR, it struck me as a bit unusual that the honour of the Crown would be delegated to -- to a First Nation to consult with another First Nation.

A. MR. HALL: No, that -- that's a separate requirement. So what happens is the proponent has to consult. Then the project comes out of *YESAA*, and it goes to the decision body, which is, in this case, the Crown; right? And there is a duty -- a duty to consult that the Crown has separately. 14:18

Q. Yes.

A. MR. HALL: So Yukon government comes in at the end, and then has to complete its own consultation directly with CTFN.

Q. Okay.

A. MR. HALL: And so that -- that happened, and that reinforced the fact that THELP and CTFN still had some work to do to come to a mutually agreeable solution.

Q. Okay. And as far as YEC is concerned, YEC has no responsibility to monitor that consultation process, see how it's going, or is that another branch of the Yukon government? 14:19

A. MR. HALL: Yeah, no, we do not have a legal responsibility to monitor that. Obviously we have a

keen interest in it being successful, but we don't carry the duty of the Crown, for example, in that final consultation step.

Q. Okay. And there's no -- there's no sort of explicit contractual obligation between YEC and THELP other than what's in 11.2 of the -- of the actual agreement? I'm looking at -- I'm looking at --

A. MR. HALL: Yeah, it's -- yeah, I mean, there's Section 11, but there's also a condition precedent where THELP has to secure the relevant permits required, which implies that they have to go through the YESAB process and also receive a decision document. 14:20

Q. Okay. So, ultimately, it's one minister or the other or the cabinet that will make the determination that consultation, you know, in this case has been adequate?

A. MR. HALL: Correct.

Q. Okay. Thank you.

I hope you'll forgive me if I am getting somewhat overwhelmed by all of the discussion around pricing or whatever, but please indulge me. 14:21

I had a question about, essentially, what the effect on -- might be on the pricing that YEC pays to THELP, you know, in sort of a net sense, I guess, if other sources of renewable energy come along, come on

stream that -- that apart from the power from -- or the electricity generated from Atlin, if these other green power sources, you know, on their own sort of displace the thermal energy, will that be taken into account at some point along the way?

A. MR. OSLER: It's taken into account in the forecasting that's done to set the price right now. So I'll come back to that.

But once you've set the price and the project goes ahead, it can't be taken into account in the sense of changing the price. The price is then locked in. Okay? 14:22

And before I go back and explain the first part, any time the utility does a new project, whether it's with an IPP or whether it's with its own planning for its own hydro project, the same issue that you've raised comes up. You do the best you can based on the forecast you have then. You make the decisions.

And the next guy that comes -- next project that comes along has got to take into account you as a given project. And they've got to now justify it. You don't get to say "You just destroyed my project because you came second" if you follow. 14:23

Q. Yeah.

A. MR. OSLER: And that's really -- that's

really, really important from a utility board point of view.

Now, we've taken into account, in Table A3 of Exhibit B-5, by saying we assumed 40 million kilowatt hours of IPPs under the SOP program. That -- as Mr. Hall has testified, we do not have 40 million kilowatt hours of IPP contracts today. In fact, we have very few today, about three, and they're very small, if you remember the GRA.

So the ten-year renewable plan and YEC's forecasting team said, "Well, by 2024, given the pace at which SOPs are gearing up and people are putting funding into it, we could have 40," so let's be conservative and assume we had 40. 14:23

If we end up with less than 40, the ratepayers benefit. If we get 40, it's okay. If somebody changes the rules and it becomes 50, that wasn't something that we could take responsibility for today. Okay.

Q. Fair enough. Yeah, yeah. No, and nobody requisitioned a crystal ball for you, so I recognize you're doing the best you can. 14:24

A. MR. OSLER: That's the essence of the exercise, sir, you're correct.

Q. Thank you, panel. I think that's all the questions I had that hadn't been asked elsewhere.

THE CHAIR: So, now, with the Board's questions concluded, Mr. Landry, I expect you will want to do some re-examination. And just to be clear and to nail things down a little bit, we understand that your questions of the Board will be limited to matters raised in cross-examination.

MR. LANDRY: Thank you, Mr. Chair. I appreciate that point from past issues, so -- I have just a couple, so if you would indulge me for a moment, I'll go through my notes to... 14:25

THE CHAIR: Certainly.

MR. LANDRY RE-EXAMINES THE PANEL:

Q. The first question I have arises out of some questioning yesterday concerning the system upgrade costs. And just as a reference point for the witnesses, page 53 of the transcript. That's where the issue of system upgrade costs we were speaking to, and I was -- I guess it was you, Mr. Hall.

And I want to divide my questions into two things that were discussed at that point in time. One is the 14:26 costs, and the other is the actual determination of what system upgrade costs are required for purposes of this project.

In terms of costs -- well, no, in fact, let me start with the other one. In terms of this control

over what system upgrade costs are required for the purposes of this project, who has control of that?

A. MR. HALL: Well, it's the utilities. So as part of the exercise, both ATCO and ourselves studied what the impact of all this power coming through the system would be. We commissioned our other independent work, so ATCO did their study, we did ours. And based on those results, the system impact costs estimates were developed.

I think it's also important just to remember that THELP will end up paying actuals, so we have estimates right now we'll incur -- we'll do the work, and then whatever actual costs are in fact incurred, that those are what -- be what THELP will pay. 14:27

Q. Thank you. Because that was sort of my follow-up question. But just to go back to the previous about the control over system upgrades, does THELP have any control over determining what system upgrades are needed by either ATCO or by YEC?

A. MR. HALL: No. I mean, there's certainly communication. We've reviewed the outcome with them, and we've had some conversations, for example, at the Jakes Corner substation about how that substation might be configured to reduce those costs. But, ultimately, it's the utilities that make the final call. 14:27

Q. Thank you. Now, there have been a lot of questions on and related to the aid to cross-examination that was provided to the witness panel by Ms. Sabo which is, for the record, A-11. And on a couple of occasions -- I guess it would be Mr. Osler would be the person who was asked about the possibility of Yukon Energy constructing the project as opposed to an IPP such as THELP.

And the debate about there was no other project, I understand that; but I think on more than one occasion the question was would it cost more, would it be -- or cost less, I guess, if Yukon Energy. And I think the answer to that question, Mr. Osler, if I can summarize it, was that it would not cost less, it would cost more. 14:29

And what I'm trying -- assuming that's right, my question is, can you explain to the Board why it is that THELP can construct a project with these costs at a level that effectively would cost YEC more than it's costing THELP? 14:29

Now, you talked a little bit about debt and equity splits and that, but I wonder if you could be concise on the record to explain why that is the case. Why is it that the IPP can effectively build a project, including all the grants and everything, and

effectively sell it to you at a lower cost than if you had -- than if YEC had constructed it.

A. MR. OSLER: The short answer, referring to JM-1-7 Amended, is that if you assumed all the same costs were necessary if YEC built it compared to what Atlin would cost if THELP built it, which was the assumption for that answer, YEC's weighted average cost of capital is higher than THELP's in the assumptions that we have used. YEC weighted average cost of capital includes 60 percent debt and 40 percent equity. 14:30
And when we ever -- we don't really know for sure. We don't have exposure to what THELP's actual planning costs are and their own internal planning, but we have assumed in discussions for the sake of trying to understand things that they had 80 percent debt and 20 percent equity.

And that debt is at the CIB interest rate they hope, which is much lower than the interest rate that YEC would have, and they've got a lot more of that low interest rate in their weighted average cost of capital 14:31
than YEC has in its, so the result is capital costs more for YEC at the moment than it does for that First Nation at the moment.

I'm not going to try and extrapolate that into all situations, but often when somebody is doing -- from my

experience personally on some other projects, not in Yukon, if a First Nation is having the opportunity with a considerable amount of federal funding to put together the financial plan for a renewable project, it will probably end up with a capital structure that's closer to what THELP is -- what we've assumed for THELP than it is to what has to happen for YEC. It will tend to be lower. But it's relying excessively on federal grant funding and other sources of funding to make it work. It's not going to the bank usually to get the bank to pay for it. 14:32

CIB -- Canadian Infrastructure Bank is the type of bank that, at the moment, if you have a large enough project, can be a very good thing for that type of investment; but if you went to a normal commercial bank, you'd have a different set of problems.

So it's nothing more in this analysis, Mr. Chairman, than the different assumptions about what cost of capital is in the sense of how to finance it as between the two entities, and I don't want to extrapolate too far from this situation because things can change quickly and -- for everybody. 14:32

And the assumption that everything costs the same for the two parties is an assumption in the answer. Depending on all sorts of things, that could be a good

assumption or a bad assumption. It could be -- as Mr. Hall said earlier, some people like to say that Crown utilities always end up costing more than IPPs, and some other people have some other opinions.

So I'm not touching that.

Q. Thank you, sir. Now, there was a question, you'll recall, again I -- let me just see who -- I believe it was by Ms. Sabo of you, Mr. Osler, which dealt, you'll recall, with the issue of whether or not there's a correlation between the water conditions in the Atlin facility versus the YIS. And if you could go to page 156 of the transcript. 14:33

A. MR. OSLER: Okay. I'm there.

Q. And there you'll see the question at the top of the page related to a quote from the exhibit she references, and it talked about this correlation of the YIS lower water sequence with low water conditions at Atlin. Do you recall that?

A. MR. OSLER: Yes.

Q. Now -- and you got into the issue of risk, and you said there was some risk, but you did not -- and I'm summarizing here, and correct me if I've summarized incorrectly, but you didn't think that it was material. 14:34

I wonder if I could just refer you to a document that you did refer to later, and it's Table A1 in

Exhibit B-5, which is the submission, the amended submission.

A. MR. OSLER: Yes, I'm just getting it, Mr. Landry.

Q. Tell me when you get there.

A. MR. OSLER: Okay. I'm there.

Q. Keeping in mind the overall context of the question about the materiality of the risk that -- because of this lack -- or inability to correlate, if I understand Table A1, this is all of the water years from 1970 to 2020 in the Atlin facility -- or in the Atlin watershed; correct? 14:35

A. MR. OSLER: Correct.

Q. Okay. You didn't want to go to the last column on this one, you were dealing with other related questions, but I'd like you to go to the last column on this one, because -- first of all, could you explain what is meant by "peak WP, December 16 to the end of February"? What is that, so that we have the context within which I can ask the question. 14:36

A. MR. OSLER: That's referring to the period defined in the EPA called the "peak winter period," from December 16th to the end of February. Each winter.

Q. Right. And that's when you need, if I can put it --

I'll put it in my term. Please correct me if you think it should mean something else. That's when you need the -- if I can put it with -- through energy, obviously, but that's when you need the capacity for the purposes of your N minus 1 criteria; correct?

A. **MR. OSLER: Yes, for the purposes of testing whether we have enough water to meet the dependable capacity commitments that we're interested in over the peak winter period, this is telling us how much delivered energy is being forecast in the model numbers that we got from SNC-Lavalin and Knight Piésold, how much energy is being forecast in their numbers between approximately the middle of December and the end of February.** 14:36

Q. Right. And that's -- we've been -- a number of occasions we've referred to that 20-day period, up to 20-day period, the key time frame within which we needed -- that YEC needed some dependable capacity; correct?

A. **MR. OSLER: Right. There's 75 to 76 days in the peak winter period depending on whether you have a leap year, and you need, at most, according to the weather information that we've cited, up to 20 days of continuous cold weather capability in order to protect yourself against N minus 1.** 14:37

Q. Okay. So now looking at that table and looking at the column that I referred to earlier and going through all of the years, and if you go down to the bottom, there's a minimum of 14.1, and I'll give you -- you can tell me what that means in gigawatt hours -- and a maximum of 15.7. Do you see that?

A. MR. OSLER: Yes. And those are millions of kilowatt hours or gigawatt hours, GWh.

Q. Right. So the question I'm wondering about, since this does actually tell us for years that have been experienced in the Aishihik water system, how does that number that I've just indicated to you for the peak winter period, how does that number help us in assessing what potential risk there is in this lack of correlation between the water in the Aishihik watershed and the YIS watershed? 14:38

A. MR. OSLER: Well, it focuses our attention on the time period when we have a keen interest in how much delivered energy we can be relative -- we can be very confident of receiving in order to meet our dependable capacity requirements. So that's the first point. 14:38

The second point is that it confirms the reasonableness of Section 7.2 of the EPA, which effectively says under all of the conditions that you

see on this page, you should be able to -- you will receive 14 million kilowatt hours of delivered energy during the peak winter period, even when the reservoir isn't full at the beginning of that period, because some of these years the reservoir, Surprise Lake, was not full in the analysis that was done by SNC-Lavalin.

So that -- those are the -- those are the two ways in which it relates directly to the agreement. And as you've referenced, when we originally developed this for the original EPA, we were saying -- we were looking 14:39
at the same type of information for what was available then, and it was also 14 as a minimum; and we were looking at it from the point of view of, if we had to run two or three different time periods of low temperatures during the peak period, would we have enough water to meet all our requirements, and we came to the conclusion that we did.

And right now we're saying you've got enough water here to meet 85 percent of the days during the peak winter period, which is an awful lot more days than the 14:40
20 minimum that we needed. So it's a test that's being met very easily at the moment, looking at the situation with the penstock and the information that's sitting here.

The only other thing that I would note is that

what I've just said is all based on what we got from SNC-Lavalin and Knight Piésold, and it meets all the tests that I just gave you; but if you turn the page to Table A2, you can see that YEC's team that's responsible for dealing with dispatch looked at this information and, in discussion with SNC-Lavalin, made itself comfortable with it and then said, "Okay, well, if we were dispatching this rather than the model of SNC-Lavalin, we would dispatch it according to the first column in Table A2," which means they would tend to dispatch it a bit more towards the peak winter period.

Translated, that means that whatever numbers you see in the final column on Table A1 are from the perspective of YEC's technical team conservative, because they would probably put more of that water and more of that delivery in the peak winter period for their own reasons. And they can do it. It's not a constraint.

14:41

Q. So let me just take you back now to the question, sir, because the question was, on page 156, relating to the risk, which you indicated there was some risk, but you didn't think it was material.

14:41

Given now that we've gone through this -- these, which includes low water years in the Aishihik

watershed, is that consistent with your position that there's not a material risk?

A. MR. OSLER: It's consistent with my position there's not a material risk. In fact, it's summarizing, saying there's virtually -- aside from breakdown of plant or something, there's virtually no apparent risk, based on the available information, of not having sufficient water to meet the dependable capacity requirement. The answer --

Q. Even in -- sorry. Sorry, Mr. Osler. I apologize for interrupting. Even in low water years in -- when the -- sorry, in the Aishihik watershed; correct? 14:42

A. MR. OSLER: Right. Well, that's where I was going to have a bit of a problem. This is all to do with information of what Atlin can provide. And even the lowest water years of what Atlin can provide, we don't have an issue in terms of having enough energy from them to run the dependable capacity that we're looking for from them.

Now, the correlation question that was perhaps being addressed at page 156 was asking what about the situation where the low water years at Atlin are correlated or happen at the same time as low water years on the YIS? 14:43

So my answer in terms of capacity is that there is

absolutely no issue with respect to challenges to N minus 1 because of that correlation. It has nothing to do with N minus 1 risks.

What I was thinking about when I was answering pages 156, 157 was simply the issues around energy, not capacity, and the issues of setting the price for energy. And I wasn't talking about a risk of security of supply, I was just talking about the displacement of thermal energy might vary slightly, but I didn't think materially, if you were able to run a model that could correlate the two things that we were just talking about. 14:44

But in terms of capacity, I was not talking about that. There is no risk in that regard with respect to security of supply for capacity.

Q. Thank you, sir.

MR. LANDRY: Mr. Chairman, those are all the redirect questions I have.

THE CHAIR: Thank you, Mr. Landry.

Is there any -- before we close, are there any other immediate issues? 14:45

MS. SABO: I don't have anything, Mr. Chair.

THE CHAIR: Okay. So just in terms of process going forward, as you will remember from Board Order 2022-05 the process order, the deadline for

filing of written argument is July 28, followed by the deadline for reply argument of August 4th. So once we have that and -- we have -- oh, and one more undertaking?

MS. SABO: Yes. July 25th.

THE CHAIR: July 25th. Right. Okay. So those three deadlines apply. And once we're done with closing the record, we'll -- we have our own deadline by which time the Minister would like to hear from us, so we will certainly aim to oblige the Minister in that regard. 14:46

At this point, I would like to thank everyone for the incredible amount of time and effort that's gone into presentations to the Board. This is not an easy matter to consider. There are a lot of -- you know, as we've seen, there are a lot of technical issues, and we thank the YEC panel for their patience in addressing questions from the interveners, from the Board, and so on.

Counsel, both Mr. Landry, Ms. Sabo, and our technical -- yes, technical support from Mr. Ward. 14:47

And at this stage, I guess it's in order to release the panel from their oath or affirmation for the proceedings.

So again, thank you, everyone, for your

contributions, and we'll be issuing our report in due course.

So thank you very much, and enjoy your day.

(PANEL STANDS DOWN)

(PROCEEDINGS ADJOURNED AT 2:50 P.M.)

PROCEEDINGS CONCLUDED

Certificate of Transcript

We, the undersigned, hereby certify that the foregoing pages 176 to 291 are a complete and accurate transcript of the proceedings taken down by us in shorthand and transcribed from our shorthand notes to the best of our skill and ability.

Dated at the City of Calgary, Province of Alberta, on July 20, 2022.

"Lorelee Vespa"

Lorelee Vespa, CSR(A) RPR CRR
Official Court Reporter

"Danielle Harmata"

Danielle Harmata, CSR(A)
Official Court Reporter

- I N D E X -

VOLUME 2

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