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Monday, November 25, 2013

Upon commencing at 9:30 a.m

THE CHAIRMAN: Good morning. Welcome back. I hope you all enjoyed your "week off." I put that in quotations. Some of us, the smarter among us, took the opportunity to go away, leave the city and go to other places for a week. A number of us who should know better, but probably need professional help, spent an entire day at a workshop on monitoring environmental effects. But here we are back at it for, I think we have three weeks left before Christmas, and then Lord knows how many in the new year. Let's hope it's only a few days, but that all depends on all of us, I guess.

The last time we left this panel, Mr. Berger was darned near on the verge of death. I'm glad to see that he's much healthier today. We didn't anticipate, even with your illness we didn't anticipate it would be this long before we got back to you. But here we are. Hopefully we can conclude with most of what we need from this panel today.

We have a procedural matter we have to deal with right off the top, so I'll recognize

Mr. Bedford.

MR. BEDFORD: Two matters, Mr. Chairman. Firstly, we have just filed this morning the reports related to sturgeon that you asked for.

Secondly, we received late yesterday evening expert reports that are ostensibly to be presented this Thursday. That's three and a half days late. That's a gross breach of your rules of process. I suggest to you that it shows a completely cavalier attitude to this process. It shows no respect for the rules and shows no respect for all of the rest of us who are participating in this process.

The participant who has done this is a repeat offender. She's done this at both of your two previous hearings. I suggest to you that she has demonstrated she is incapable of understanding and applying orderly rules of process.

You said in the meetings leading up to this hearing that you would show no tolerance for this kind of behaviour. So I now ask you to do what you said you would do, show no tolerance for this type of behaviour. The penalty in your rules for doing this is that this evidence shall not be

heard at this hearing, shall not be paid for. And I would recommend to you that you warn this participant that if this happens again, in this hearing, that her participant status will be revoked along with the balance of her funding. Thank you.

THE CHAIRMAN: Thank you, Mr. Bedford.

Ms. Whelan Enns, would you care to speak to this?

MS. WHELAN ENNS: Good morning, Mr. Chair and panel. I will pass on responding.

THE CHAIRMAN: Bring the mic in a bit closer.

MS. WHELAN ENNS: Thank you. I will pass on responding specifically to Mr. Bedford. He's doing his job.

We have made a mistake and I appreciate the reminder from the secretary of the CEC. We would have filed as soon as we had that reminder, and I saw it on Sunday. We were able to file on Thursday. And the issue in our office has to do with the fact that these two witnesses were moved in the schedule at least three, maybe four times. The secretary of the CEC then assisted us because they were moved into the first week in

December, assisted us in moving them back to this Thursday. The problem arises from a date, being the November 25th date being put into our calendars in our system in our office for everything we were filing. So the witnesses that are scheduled now for next Monday will be filed on time.

We apologize. There was no intent here. In our office we call it Hydro brain, which comes from overwork and tunnel vision. And as I said, we might have had to take the step of filing an update, but we were able to -- we would have been able to file on Thursday.

And I take responsibility. There's no point in saying, you know, so-and-so did such-and-such at all. So I apologize to the Commission.

There is one thing that's correct about Mr. Bedford's comments, and that is considerable resources and investment, and time put into the work for these two witnesses on Thursday. And in both cases, the effort, leaving the financial investment out, the effort and so on on our side has to do with doing our best and our best efforts to in fact follow through on what the

CEC either suggested, asked for in contribution to these proceedings, or identified as a possible way to respond to our work plan.

I'm sure you must have questions, and I was sort of horrified when I realized, when I saw the secretary's e-mail. We had a conversation about anything pertinent and we missed the conversation on this again. I take full responsibility.

THE CHAIRMAN: When were your dates shifted?

MS. WHELAN ENNS: I haven't gone through the complete chronology, Mr. Chair, but what happened in terms of what went into our system and our calendars for, you know, the four or five of us working with these witnesses, is that the sheet that was handed out that said that the due date for our witnesses was November 25th, you know, rode over the reality in the shift back where there was a discussion about all four witnesses being in the first week in December. And I had to ask the secretary of the CEC to move the Coldstream presentation back into the last week of November. So the sequence is definitely a function of the challenges in scheduling and the

things that have happened in terms of extending the hearings. And that discussion had to do with the fact that there was no physical way that the two experts from Coldstream Consulting could move into the first week in December. So, again, the sequence of conversations where we ended up nodding our heads at each other in terms of splitting rather than having continuous.

THE CHAIRMAN: How long ago was that change made back to this week?

MS. WHELAN ENNS: I haven't looked at the exact sequence. The challenge that we have had in our office, in terms of what I had been able to determine happened, and this is not to discount what I'm saying about taking responsibility for this, is that that November 25th date went into everything and was taken by staff around me as the due date for all witnesses.

I think -- I mean, I can certainly, if you wish it, go through the sequence in terms of the e-mail exchanges and so on, but I think it's probably -- we have just been away for a week, so it's -- thinking about schedules and when they are released on Fridays, so it must be two weeks

anyways.

THE CHAIRMAN: Now, your office is also providing some support for the Peguis participation, is that not the case?

MS. WHELAN ENNS: That's right.

THE CHAIRMAN: And they got their materials in on time.

MS. WHELAN ENNS: Um-hum.

THE CHAIRMAN: So that came out of the same office.

MS. WHELAN ENNS: Yes.

THE CHAIRMAN: Okay. I don't have any more questions.

Mr. Williams, were you wanting to say something here?

MR. WILLIAMS: Excuse me, members of the panel, good morning. Just for what it's worth, our clients certainly appreciate Manitoba Hydro's concerns about prejudice and the stresses no doubt their staff are under. So that's one issue that our clients are alive to.

I guess the second important issue from our client's perspective is, will this information potentially assist the panel in its deliberations? And certainly one option that our

client could consider, would at least recommend that the Commission look at considering is, given the very legitimate concerns about Hydro in terms of prejudice, but also concerns about losing valuable information that may assist its deliberations, one option we would at least suggest the Commission consider is deferring the hearing of this evidence to a later date.

For what it's worth, Mr. Chair, those are our thoughts.

THE CHAIRMAN: Thank you. Do any other participants wish to speak to this?

MS. WHELAN ENNS: Overtalking, it's difficult on the transcript, apologies. We can take, if it is adequate in the judgment of the panel, we can take the step to move these two witnesses. If I'm understanding Mr. Williams, I have had, because of the changes in moving the two Coldstream experts around, schedule some challenges. I accept that challenge.

The other thing that was important to the secretary, I believe, was to look for and identify full days in terms of witness presentations, which is why then the second presentation --

THE CHAIRMAN: Leave that issue to us, the panel. When the panel considers this issue in general, we also consider the scheduling.

Ms. Kearns?

MS. KEARNS: Pimicikamak has no objection to the filing of the reports. I echo Mr. Williams's comments that Pimicikamak is interested in making sure that all of the evidence is before the panel, and certainly would have no objection if the schedule needs to be moved around to accommodate that to avoid prejudice to Hydro.

THE CHAIRMAN: Thank you. Any other comments? No.

Ms. Whelan Enns, any final comments?

MS. WHELAN ENNS: No, I don't believe so. And again, if in terms of your earlier question, you would like us to provide a specific chronology, we can certainly do that.

THE CHAIRMAN: We'll work that out if it comes to that.

MS. WHELAN ENNS: All right.

THE CHAIRMAN: Mr. Bedford, any closing comments?

MR. BEDFORD: No, I think you have the issue.

THE CHAIRMAN: I'm sorry, Mr. Bedford, I was distracted.

MR. BEDFORD: No, I think you clearly understand the issue. Thank you.

THE CHAIRMAN: Can you speak to how the Partnership has been prejudiced by this?

MR. BEDFORD: Well, as an obvious example, one of these reports touches upon the terrestrial work that my client has done. When these reports come in, they have to be read by a number of people, then we have to receive comments. Mr. Berger and his colleagues are up here today. When you get it three and a half days late, we lost last Friday. You don't sit in any event on Fridays, but you certainly weren't sitting last week on Friday. We lost Friday, we lost Saturday, we lost Sunday, we lose today because they are here testifying today.

This evening, my colleague, Ms. Mayor and I have to work on the evidence that Mr. Williams is bringing tomorrow. We simply don't have the time to prepare, read through the reports and develop cross-examination, if cross-examination is warranted. That in a direct way is the prejudice.

In a more broad way, when you set ground rules for a hearing and people ignore the rules and don't follow the rules, that in itself is prejudice. The result of doing those sorts of things does lead to longer hearings, a length that becomes unnecessary, because people haven't followed a simple orderly process that you laid down.

And when you tell people in advance of the hearing, don't do these kinds of things because there will be repercussions, you have to follow through, with respect, and enforce the repercussions.

THE CHAIRMAN: Thank you, Mr. Bedford. The panel will consider this as quickly as we can, probably over lunch if we can find some time, and we'll come back with a decision hopefully later today.

So now thank you, Ms. Whelan Enns.

We'll now turn to the main focus of the day, at least the start of the day, Mr. Williams continuing his cross-examination of the terrestrial effects panel.

MR. WILLIAMS: Both for the CEC as well as for the Hydro panel, I think when we left

off, goodness knows how long ago it was, we were referring to CAC Exhibit 4. I don't know if the panel members have it with them. I have taken the liberty of making a few extra copies. If I might have your permission to approach?

And Mr. Berger, I am sure you have memorized that document.

MR. BERGER: I have it in my possession.

MR. WILLIAMS: Good morning, Mr. Berger.

MR. BERGER: Good morning, Mr. Williams.

MR. WILLIAMS: How are you feeling?

MR. BERGER: Much better, thank you for asking.

MR. WILLIAMS: I probably would have preferred to have our discussion when you were more vulnerable, but I think this is our third effort to finish this off. I don't think we'll be that long.

Mr. Berger, in terms of, again, just to refresh our memory, CAC Exhibit 4, you'll agree is an excerpt from the Environment Canada scientific assessment related to habitat and

woodland caribou?

MR. BERGER: Correct.

MR. WILLIAMS: And it's a document that you have some familiarity with?

MR. BERGER: Yes.

MR. WILLIAMS: And it would have been one of the documents that, in preparing your advice to the Clean Environment Commission and to the Partnership, you would have had some reference to. Agreed?

MR. BERGER: Yes.

MR. WILLIAMS: And you, at least at a high level, have some familiarity with the scientific assessment and its methodology. Agreed?

MR. BERGER: Yes.

MR. WILLIAMS: Again, Mr. Berger, perhaps by way of refresher question, because I think this has been asked before, but you would agree that habitat loss is recognized as an agent of decline with regard to the SARA protected forest dwelling caribou?

MR. BERGER: Yes, habitat loss is a component of this, yes.

MR. WILLIAMS: And in terms of

habitat, and you may want to have your pen nearby for this, Mr. Berger, can we agree that an appropriate definition of habitat is the suite of resources and environmental conditions that determine the presence, survival and reproduction of a population?

MR. BERGER: Yes, that's correct. And the Environment Canada report, although not part of the filing that was produced for the Commission, does have a suite of definitions in the back, and it does say that it's a suite of resources such as food and shelter, and the environmental conditions and variables such as temperature and biotic variables, such as competitors and predators that determine the reproduction of the population. And as such, we certainly looked at these very suite of components as part of the environmental assessment.

And for example, we took a very close look at the moose population, in part as a competitor, as well as the predators that are associated with those moose populations so very carefully. And as described in the presentation that I gave a few weeks ago, those predators, in fact, as part of the Keeyask project and their

densities are very low in this particular project area, at about 1.4 wolves per thousand square kilometres.

So it's not just the Environment Canada model that was looked at, we actually looked at the drivers behind what this model actually entails. And that includes providing predator densities, as well as looking at more closely the linear features, looking very closely at the caribou calving habitat within the area. So we looked at a broad suite of indicators with their benchmarks to take a look at whether or not the project would have significant effects.

MR. WILLIAMS: You must be feeling better, Mr. Berger. That was a very thorough answer to a very short question.

Now, if I could ask you, can we agree that to define recruitment is the addition of Young of the Year to the adult population?

MR. BERGER: Yes, that is correct. And that is generally defined as the caribou that are added to the population anywhere between six and 10 months of age.

MR. WILLIAMS: And recruitment is widely regarded as a reliable indicator of the

direction of population growth for a population such as SARA protected caribou. Agreed?

MR. BERGER: In part, yes, that is correct. The overall growth of the population is described usually by Lambda, which is balanced by mortality and recruitment. So recruitment is one of two components.

MR. WILLIAMS: And indeed, you are anticipating my next point, Mr. Berger, that in the context of Environment Canada's scientific assessment of SARA protected boreal woodland caribou, and the development of their population simulations, one element of their determination and the stability of their population involved considerations such as the annual potential breeding survival rate and the annual recruitment of females. Agreed?

MR. BERGER: Agreed.

MR. WILLIAMS: Now, if I can turn you to Roman numeral IX in Exhibit 4 -- excuse, me Roman numeral VIII in Exhibit 4. And Mr. Berger, you'll see there figure 2 from the executive summary of this report. Agreed?

MR. BERGER: Agreed.

MR. WILLIAMS: And if I look at the

bottom axis or the X axis of this figure -- we'll just wait one second, Mr. Berger.

THE CHAIRMAN: Where are you?

MR. WILLIAMS: It should be on Roman numeral VIII.

THE CHAIRMAN: Okay. Got it now. I was looking at point number eight.

MR. WILLIAMS: I apologize, Mr. Berger, I don't like to proceed unless the Chairman is following.

THE CHAIRMAN: Good advice.

MR. WILLIAMS: If we look to the X axis, that represents the percentage of total disturbance on this figure. Is that correct, Mr. Berger?

MR. BERGER: That's correct.

MR. WILLIAMS: And for the purposes of Environment Canada's assessment, that would include both fire and human disturbance. Agreed, sir?

MR. BERGER: Yes, that is correct. And as I described last time, the primary driver behind that total disturbance, albeit it's a combination of anthropogenic disturbance plus fire, is that the main part of the driver of this

model is the anthropogenic disturbance.

MR. WILLIAMS: You also would agree though, sir, that when Environment Canada sought to describe habitat disturbance, the model that best described that was a combination of human and fire. Agreed, sir?

MR. BERGER: Yes.

MR. WILLIAMS: And indeed their combined influence was greater than the sum of their individual contribution in the model that best described that relationship. Agreed?

MR. BERGER: Yes, that is correct. And there is one other component, for example, as part of the model, as I recall, in its development, in that the actual area affected by reservoirs was initially included as a disturbed habitat. But, in fact, the model performed better and increased its performance by 12 percent by actually including things such as hydroelectric reservoirs as non-disturbed habitat. So there's a number of elements that do describe why the model is performing in the way in which it did. But, yes, Mr. Williams, both of those are important factors.

MR. WILLIAMS: And directing your

attention back to figure 2 from the executive summary and the Y axis, or the axis on the left-hand side for those of us who struggle with X and Y, that examines the probability of observing stable or positive growth at varying levels of range disturbance. Would that be correct, sir?

MR. BERGER: Yes, that's correct.

MR. WILLIAMS: And if we direct our attention back to that percentage of total disturbance and move out to the right of that figure to around the 50 percent total disturbance, you'll agree with me that the insight from this analysis is that the more disturbed the environment is, the higher the probability that stable or positive growth will be diminished. Agreed?

MR. BERGER: Yes, that is correct. And as a reminder to the participants and the Commission, with respect to this disturbance related to the Keeyask area, we are looking at an environment that is disturbed by fire, and it can range below or above approximately 30 percent over time. So as those disturbances over time get less and the habitat grows and provides more habitat to caribou, there will be times over the long-term

where caribou, as compared to this model, may be better off with more habitat available. And at times when the fire is higher, certainly the caribou will have to look for other mature habitats where the areas are not burned, and they will be found in areas that are obviously less impacted by the fire disturbance.

MR. WILLIAMS: And we are agreed with the proposition that the more disturbed the environment, the less likely stable or growing population of the SARA protected population. Agreed?

MR. BERGER: Yes, that's correct. And bringing it back to Keeyask, when we look at the anthropogenic disturbance, for example, in our regional study area, we are looking at a low level of disturbance, at approximately 6 percent. So compared to other boreal woodland caribou populations in Manitoba, that's relatively as low as the lowest boreal woodland caribou elsewhere.

MR. WILLIAMS: Just that 6 percent figure, Mr. Berger, would it not be correct to suggest that the Partnership's analysis of the current area disturbed was in the range of 33.9 percent?

MR. BERGER: You are correct, but that would include fire.

MR. WILLIAMS: So 33.9 percent, sir?

MR. BERGER: If we compare it to this model alone, that is correct, sir.

MR. WILLIAMS: Now, if you would turn to page 30, Mr. Berger, in terms of the -- you'll see a heading there, Future Conditions, in terms of the Environment Canada scientific assessment. Do you have that, sir?

MR. BERGER: Sorry, could you please repeat that?

MR. WILLIAMS: Page 30?

MR. BERGER: Sorry, just to step back for one moment. In a broader response to the answer, that 33 percent that Mr. Williams was referring to and which I agreed to was for the current conditions. So that is as of today. So, again, as I described, with fire, those conditions are going to change over time and they can be either higher or lower.

MR. WILLIAMS: And the figure was 33.9 percent, sir?

MR. BERGER: Yes.

MR. WILLIAMS: Now, when we look at

page 30, this excerpt from Environment Canada, you would agree with me that the scientific assessment from 2011 employed a habitat dynamics model to better understand how future changes in habitat conditions within a range might affect the sustainability of boreal caribou populations. Agreed, sir?

MR. BERGER: Could you please describe to me what you might mean by habitat dynamics model? Are you referring to all four conditions or?

MR. WILLIAMS: Well, sir, just first of all, are you familiar enough with this report to understand that they used a semi spatial habitat dynamics model?

MR. BERGER: I understand the basics of the model, correct.

MR. WILLIAMS: Okay. And in terms of the elements of the model, in essence, they examined four scenarios, including static conditions, recovery only, natural disturbance only, and recovery and natural disturbance. Agreed, sir?

MR. BERGER: Agreed.

MR. WILLIAMS: And when they looked at

natural disturbance, the natural disturbance they prospectively examined was fire. Agreed, sir?

MR. BERGER: Correct.

MR. WILLIAMS: And in essence, when they looked at future habitat conditions, they looked at the likelihood of future fires and natural forest recovery as part of their analysis. Agreed, sir?

MR. BERGER: Yes, that is correct. They looked at two conditions for recovery, plus natural disturbance and recovery only.

MR. WILLIAMS: Thank you. Mr. Berger, as a general conceptual premise, can we agree that when we undertake a risk assessment of a population, it is important to acknowledge the uncertainties relating to that current population, as well as the reliability of the information available, as a general premise?

MR. BERGER: Yes, as a general premise, absolutely. And I believe that we certainly did take a close look at the uncertainty associated with this particular project. And one of the main things we did, of course, is to take a look at the summer resident population and treated them as if they were, in fact, woodland caribou.

So when we took a look at the modeling and the habitat and calving and rearing habitat losses as part of this process, we took a careful look at the benchmarks and thresholds as part of dealing with that uncertainty. And we also assessed the extent of the animals exhibiting that calving behaviour. And we also took a look at the collaring information that was available for Manitoba Conservation to take a look at spacing and whether or not those animals, in fact, although we know that they were using the reservoir, but we also know that they were using areas outside of the reservoir. So we definitely took a look at many factors to try and deal with the uncertainty associated with this project.

MR. WILLIAMS: Staying again at a general conceptual level, can we agree that generally the less information available, the less certainty there is to outcome, sir?

DR. EHNES: If I may? Since we're on the topic of modeling, and Dr. Schaefer had raised the question when he was here as to whether or not modeling of the future fire regime should be undertaken, and there has been some discussion of the use of scenario analysis, scenario modeling,

as a way of addressing uncertainty as to the future. And I'm familiar with the Celus model that is mentioned in the boreal woodland caribou strategy report. And when we were starting out with the assessment and well into the assessment, we had intended to use the more complex modeling approaches to the future. And in the end, we decided that they were not necessary for a number of reasons.

There were some situations where complex modeling was used. And one example of that would be the shoreline erosion, predicting how peat lands would respond to flooding over time. That was something that was not -- there were no models available for that. So there was a lot of work done to understand those processes, to develop those models.

In terms of future scenarios, once the project was well understood in terms of what it involved and what its spatial extent was going to be, and the extent to which potential effects had been reduced by the project design process and the other mitigation, the effects of the project in combination with other projects in the regional context in terms of intactness, total terrestrial

habitat loss, was still relatively low. The prospects for future development in this region are relatively limited. We're not talking about central Alberta or the Columbia basin. We're talking about a place that's fairly remote. There's limited infrastructure, so the pace of future development and the nature of future development is quite limited.

Taking those things in combination, and looking at, for most indicators, at least for the terrestrial ecosystem, we were still well away from any benchmark for significant effects. The regional ecosystem is nowhere near an ecological tipping point. So after talking all of those things into consideration, you know, we have to make a judgment on what is a reasonable level of effort for modeling. Do we need to do some sort of complex landscape modeling like Celus, which does a good job of bringing in things like commercial forestry, other things that might be happening scattered over the landscape. That is not the situation we have here in the Keeyask region. So we did use models. We used empirical models that were based on information collected from the proxy areas. And given the buffer that's

built into our estimate of project effects, and that were not close to the benchmarks for most of the indicators we're using for terrestrial environment, and for those indicators where we are close to benchmarks, that's where additional mitigation was brought into the picture in terms of the project. For all of those reasons, we did not pursue complex modeling as a general approach to future projects.

Certainly we modelled the future effects of current projects and past projects, and the future projects that were reasonably foreseeable.

And then turning specifically to fire, which is the topic we're on right now, you know, we saw a very simple fire model when Dr. Schaefer was here, and some of the issues with that model were pointed out. But in terms of predicting the future and the level of fire disturbance, if we look at that same table that Dr. Schaefer had put forward, we can see from the table by looking at how much area burned in each year, whether the level of disturbance today, or as reported in the EIS, is at historic low or historic high. You know, we have to keep in mind that the percentages

that are reported in the Environmental Impact Statement are the level of disturbance in a particular year. And as we know, in some years quite a large area burns, but in most years it's a relatively small area.

So looking at that table going back in time, if we would have done the -- reported the area burned or the level of disturbance for a few years earlier, it would have been higher. And it would have continued to be higher. It would have bounced up and down because you get a large fire and then over time, you know, those areas regenerate, grow back, and other areas that are younger than 40 years now age to the point where they are 40 years old.

So that table already tells us that disturbance in the past from the fire was higher than it is as of the year that it's reported in the EIS. And that level of disturbance goes up and down. You know, there's a year where there's a lot of fires, so fire disturbance goes up, and then it gradually comes down. Then there is another large fire year and it gradually goes down. It is not quite that systematic of a pattern, but that is the general pattern. So the

animals and the caribou in that region have survived through periods when there has been a higher amount of fire disturbance.

MR. WILLIAMS: I'm going to come back to you, Mr. Berger, in just a second.

But, Dr. Ehnes, you suggested the subject was fire but you'll recall that the discussion I'm having with Mr. Berger is the SARA protected species woodland caribou. Agreed?

DR. EHNES: Yes.

MR. WILLIAMS: And sir, what you have just confirmed to us is that in terms of trying to assess the impacts upon this SARA protected species, the Partnership did not undertake a complex prospective modeling such as the habitat dynamics model would, including fire. Agreed?

DR. EHNES: We did consider the effects of fire throughout the assessment, and that fire regime analysis was a component of what was considered for the -- well, I'll let Mr. Berger speak to the caribou.

MR. WILLIAMS: Let's be clear and answer my question.

DR. EHNES: Sure.

MR. WILLIAMS: You did not undertake a

prospective habitat dynamics model with regard to caribou habitat that included a prospective look at fire akin to what Environment Canada did. Agreed?

DR. EHNES: I can speak to prospective habitat modeling and fire modeling, Mr. Berger will have to speak to the caribou component of your question.

Yes, we considered doing it but deemed that it was not necessary in the context of the cumulative effects in the region.

MR. WILLIAMS: Mr. Berger, you did not do that?

MR. BERGER: No.

MR. DAVIES: I'd just like to add to that. When we first started the presentation, we said that there were five different ways that we collected information for this program. The first was scientific studies, second, Aboriginal traditional knowledge, third was the use of proxies, fourth was historic information and the fifth was models. And we said that we tried to use more than one wherever possible, but rarely did we use all five of them.

In terms of scientific studies, we

conducted one of the longest study programs, or the longest study program that Manitoba Hydro and the Partnership has conducted to date. It was conducted in a culturally sensitive manner. We utilized the Aboriginal traditional knowledge and the local knowledge from the people that we worked with. We used Stephens Lake as a proxy. Historic information to the extent that it was available. And you just talked about models. So there were a number of knowledge sources that were used, not using one specific model from one specific area does not necessarily mean that there was a lack of information.

MR. WILLIAMS: I'll come back to you in one second, Mr. Berger.

But, Mr. Davies, you are in no way suggesting that a habitat dynamics model, modeling the prospective impacts of fire, is in any way culturally inappropriate or insensitive, are you, sir?

MR. DAVIES: No, I was referring to the ability to tag, or collar rather -- being a fisheries biologist we call it tag -- but collar caribou and follow it was something that was not culturally acceptable to the First Nations at

first.

MR. WILLIAMS: Okay. Now, Mr. Berger, I believe you have confirmed that you did not conduct with regard to the SARA protected species a habitat dynamics model which would have included prospective impacts from fire disturbance. Agreed, sir?

MR. BERGER: That is correct. Nor could we have actually followed the actual natural disturbance recovery portion of the model as that information is not contained within the science reports.

MR. WILLIAMS: And you also didn't conduct a more simplistic analysis using Monte Carlo simulations of the prospective impact of fire combined with other disturbances on this SARA protected species. Agreed?

MR. BERGER: One moment to confer with my colleague? Yes, you are correct, that no Monte Carlo simulations were conducted as part of it. What we did do is generate the Environment Canada model based on current conditions. In addition, we also added future projects to that model to see what further anthropogenic changes there could be as a result of those future projects, which is

something that Environment Canada doesn't do with their models.

MR. WILLIAMS: What you did not include was prospective fire?

THE CHAIRMAN: Mr. Williams, I just need a little help here. What's a Monte Carlo simulation?

MR. WILLIAMS: Dear Lord.

THE CHAIRMAN: Anything to do with gambling?

MR. WILLIAMS: Mr. Berger, or Dr. Ehnes, you can help me out here, but Monte Carlo simulations are a standard statistical approach, en vogue for the last 20 years, in which someone trying to assess risk randomly generates a thousand or 10,000 variables to get a prospective look at possible future outcomes. Can you do better than that, I hope?

DR. EHNES: Well, I can add to that. Essentially, if you have a model that predicts an outcome and it has input variables that go into that model to produce the outputs, a Monte Carlo approach randomly selects the value of those inputs, runs it into the model, runs the model, produces a prediction, and then does that a

thousand times.

So the assumption is if you are randomly selecting from the possible input values, you're getting a probability distribution of outcomes using that particular model, assuming it's a realistic model and a suitable model and all kind of other assumptions.

THE CHAIRMAN: Thank you.

MR. WILLIAMS: Thank you. And Mr. Chair, I just want to be clear. I shouldn't have used those words, but I wasn't commenting upon the question, I was commenting about the challenges of trying to describe it in a question.

THE CHAIRMAN: I accepted that.

MR. WILLIAMS: Mr. Berger, just to confirm, in your prospective analysis, not included was the impact of future fire disturbance?

MR. BERGER: What was included in the understanding of how this model works is the work, as Dr. Ehnes described, an understanding of the fire within both the zone five and zone six regional study areas. And with that further understanding, based on how those changes may occur either below or above what that disturbance

regime for fire might be. And as I had indicated before, in this northern environment, and as Dr. Ehnes described, is that the caribou have dealt with these lows and highs over time. So that is what we used to understand the fire disturbance portion of it, without running any sort of further simulations on it.

MR. WILLIAMS: Okay, thank you.

Can we move to a different aspect of uncertainty? Mr. Berger, I believe in your evidence -- and sir, just to refresh your memory, I will use sedentary ecotype interchangeably with SARA protected caribou. But, sir, in your evidence a few weeks ago now, you indicated that the sedentary ecotype, its range can be in the hundreds or thousands of square kilometres. Agreed?

MR. BERGER: Yes, as part of the sedentary ecotype as described for the boreal woodland caribou, it can be hundreds, thousands, and if we consider that the collared Pen Islands animals, that the good work that Manitoba Conservation and Water Stewardship and the resource management boards have been conducting since 2010, if we understand that some of those

animals, in fact, were calving, using solitary calving behaviours, their animal range as defined by eight collared animals is about 41,000 square kilometres. So understanding that the hundreds to thousands, if we apply our understanding to potential boreal woodland caribou, those ranges in fact could be substantially larger as well, and we have to understand that as part of the Keeyask project.

MR. WILLIAMS: Thank you for that. And when we're trying to understand population trends for these solitary calvers, would it be fair to say that one of the challenges we have, sir, is the relatively solitary habits?

MR. BERGER: If I can refresh the Commission's memory as of a few weeks ago, yes, I did agree with Mr. Williams, that the solitary calving behaviours is of paramount importance. But we do have to understand the spacing of that solitary calving behaviour as well.

I believe I indicated to the Commission that some islands in the lakes certainly have more than one caribou on them. I believe I may have said. And if I haven't said it, I will put this forth, that there are also

moose on those same islands in Stephens Lake, so that spacing away behaviour isn't entirely similar to what most of the literature does say. So there is certainly separation of moose and caribou on those islands as a spacing away behaviour, because those islands don't have any predators.

And what we have also seen from the collaring information and the importance of the spacing away behaviour, and the solitary calving behaviour, apart from Stephens Lake, is that numbers of caribou are using those island complexes, as I pointed out in the presentation. So equally as important, these areas outside of the reservoir itself do have caribou on them, and there is instances where we have information on those solitary calving behaviours.

MR. WILLIAMS: Mr. Berger, just to make sure you heard my question. Generally speaking, a challenge in getting a handle on the population trends of the sedentary ecotype flows from their solitary behaviour. That makes them harder to count. Agreed?

MR. BERGER: Yes, certainly it does make it harder for us to count these caribou based on the behaviours such as the solitary calving

behaviour. But there are two, two methods in which we can in fact do that. So with respect to understanding what the numbers of animals might have been on those islands, and as part of the information requests, and as part of the EIS, we did describe the relative population at between 20 and 50 animals on the islands and lakes alone. And further to CEC 37 A, I believe, we estimated what that population might have been over a broader regional study area at approximately 150 caribou or so, being a conservative estimate of those animals. It's a little bit difficult in our area to count those animals because of the influx of the coastal animals when they do come in, in winter.

MR. WILLIAMS: Sorry, Mr. Berger, I didn't mean to interrupt.

Speaking specifically of the summer resident caribou, sir, is the Partnership confident they have an accurate count of the reproductively active females? Speaking exclusively of the summer resident caribou.

MR. BERGER: We have two sources of information for the reproductively active females. That being with respect to the calves that were

detected on the islands and lakes and the sparsely treed peat lands between the work that we did in 2003, '05, '09, '10, '11, '12, and where we're continuing to monitor, we do have information on the relative numbers of reproductive females using the habitat in our project study area.

As well, we did take a look at the initial information provided, based on the collaring data in 2010 and '11. And understanding that the sample size was low at that time and it has been furthered since then, we do have an understanding of some of those reproductive females as well.

MR. WILLIAMS: Mr. Berger, confidence is a term of statistical art; is it not?

MR. BERGER: Yes.

MR. WILLIAMS: Is the corporation confident it has an accurate representation of reproductively active females?

MR. BERGER: Currently, what we do have is what I just described. We do not have, although we don't have a high level of detail as to what the recruitment and mortality might be for this particular population, and there is some level of uncertainty, moving forward with respect

to monitoring the potential effects of the project, that information, and additional information such as recruitment and mortality as part of the monitoring program can be obtained. I believe we have more than enough information to conduct this Environmental Impact Statement, and understand with respect to all the information that was gathered therein with respect to caribou, we certainly had confidence in that respect for all of the information collected.

MR. WILLIAMS: Sir, using the term confidence in the statistical sense, is the corporation confident it has an accurate handle on the recruitment of females into the population?

MR. BERGER: If you are referring to such things as the evidence collected as part of future monitoring, and if you are referring to such things as potential power analysis, those types of things, in fact, can be worked into and incorporated into the future monitoring. And that information, if needed, can be collected.

MR. WILLIAMS: I'm talking about today, sir. And I understand your answer for the future, but in terms of today, is the corporation confident in the statistical sense that it has, in

terms of the level of recruitment of females into this population of summer resident caribou?

MR. BERGER: In a general principle, with respect to the literature and understanding the parameters behind recruitment, we do have an understanding of what that might be.

With respect to the 20 to 50 animals, and more animals that may be located within our area of interest, we do not have that specific level of information.

MR. WILLIAMS: Okay. Thank you.

Dr. Ehnes, it appears on page 6 of your slides, you probably, I think you'll remember this quote:

"It's the opinion of this, the terrestrial team, that fire is the dominant natural force that changes ecosystems in Northern Manitoba."

Agreed?

DR. EHNES: Agreed.

MR. WILLIAMS: And in your terrestrial assessment, you candidly pointed out that a single large and/or severe fire could substantially alter habitat composition over the long term, which could alter many of the terrestrial environmental

predictions. Agreed?

DR. EHNES: I don't agree. During the cross-exam of Dr. Schaefer, when he was here, it was pointed out that that was a misquote from the EIS, which I believe he acknowledged. Those words are in the EIS, but the first half of the sentence is missing. That is referring to a human caused fire, not a natural fire. And yes, if the project causes a large fire that would not otherwise occur, that would be of great concern. But large natural fires are part of the disturbance regime.

MR. WILLIAMS: Fair enough. Can we agree that the fire regime is highly dependant upon climate?

DR. EHNES: Yes, we can agree that's one of the factors, yes.

MR. WILLIAMS: And can we agree that if one were to survey the scientific literature in terms of predicting future effects of climate change on fire regime and processes in the Canadian boreal forest, that the reported trends include higher fire activity in the regional study area?

DR. EHNES: The literature documents or talks about trends across the Canadian boreal

and some of the factors that drive those trends. It's generally accepted, or I think the consensus is that evapotranspiration is driving the level of fire disturbance. There's not unanimity in that. And I believe in past testimony, I have talked about the relationship between evapotranspiration and fire.

There also have been long-term studies that have looked at fire disturbance patterns over two to 300 years in the continental boreal, and they reported a long-term decline in the rate of fire disturbance. So it certainly is not clear, but the consensus is that evapotranspiration is the key driver.

MR. WILLIAMS: Sir, I didn't think this would be contentious, but if I were to turn to page 127, chapter 2 of your terrestrial report, would I not see the suggestion that the reported trends include higher fire activity in the regional study area attributed to climate change? Section 2.5.3.1?

DR. EHNES: Okay. Your question was referring to past trends or future trends? This section is talking about the past trend in fire disturbance.

MR. WILLIAMS: Sir, in terms of the Partnership's evidence, it is aware of numerous scientific publications documenting the effects of past climate change and predicting future effects of climate change. Agreed?

DR. EHNES: Sorry, could you say that again?

MR. WILLIAMS: In terms of the Partnership's terrestrial evidence, it is aware of scientific publications documenting the effect of past climate change and predicting future effects of climate change. Correct?

DR. EHNES: Agreed.

MR. WILLIAMS: And you discussed that evidence in this section of your report. Agreed?

DR. EHNES: Yes.

MR. WILLIAMS: And is not the conclusion of this section, the fact that the reported trends include higher fire activity in the regional study area?

DR. EHNES: In terms of what's happened historically, correct.

MR. WILLIAMS: Mr. Berger, going back to you and the SARA protected species of caribou, it would be accurate to say that within the

current literature relating to boreal, SARA protected boreal woodland caribou, Callaghan, for example, they have identified weather and climate change as affecting several aspects of boreal caribou ecology in a way that may magnify the principle cause of decline. Agreed?

MR. BERGER: You indicated Callaghan? Would you have a reference available for me to confirm what you were saying with respect to that?

MR. WILLIAMS: Certainly, sir, if you wanted to look at pages 16, 17 or 19 of Callaghan. That's a document you are familiar with, correct, sir?

MR. BERGER: Yes, I believe I am familiar with that. But with respect to his statements, and weather and climate, and subject to check, I do believe that I recall that climate and weather can certainly affect the future prospects for caribou persistence.

MR. WILLIAMS: And within the caribou literature, indeed, there is a concern that climate change, particularly greater weather variability, may increase the frequency and severity of wild fires. Agreed?

MR. BERGER: If Dr. Ehnes would have

anything to add to that? Yes, I would agree that the variability of those changing climate conditions can certainly add stressors to caribou populations when they occur.

MR. WILLIAMS: Just last couple of questions for you, Mr. Berger. You are aware that the Environment Canada's scientific assessment from 2011 had a panel of scientific advisors. Were you aware of that, sir?

MR. BERGER: Yes.

MR. WILLIAMS: Am I correct in suggesting that you were not one of those advisors?

MR. BERGER: Yes.

MR. WILLIAMS: Mr. Chair, I have no further questions.

THE CHAIRMAN: Thank you, Mr. Williams.

Just before we leave this subject, I have a couple of quick questions. And then I think we may take a break and the panel will consider what, if any, questions we have to ask. But before we take the break, and this sort of follows on the line of Mr. Williams' questioning this morning, but it's probably much simpler and

hopefully a much simpler response. Am I correct in assuming that the Partnership, in following western scientific knowledge, has not yet accepted or determined that the summer resident caribou are boreal woodland caribou? Is that correct?

MR. BERGER: With respect to the EIS, all conditions in fact were looked at, including the perspective of Manitoba Conservation and their not being boreal woodland caribou. But the Partnership and our First Nations partners have indicated there are local woodland caribou there. We have looked at the calving evidence very carefully, they are calving solitarily, as part of our assessment and as part of our benchmarks. And certainly that's why we took such a precautionary approach and looked at it from the perspective of woodland caribou.

THE CHAIRMAN: But you haven't accepted, with any finality, that they are woodland caribou?

MR. BERGER: There would be potentially legal requirements as part of that understanding. And certainly with respect to Environment Canada and Manitoba Conservation, there are no known woodland caribou populations

there in the region. So we did, in fact, consider that, but we considered woodland caribou, absolutely.

THE CHAIRMAN: And you mentioned legal requirements or implications. Is that simply SARA, or are there other legal implications?

MR. BERGER: I believe that would be both for SARA and the Manitoba Endangered Species Act.

THE CHAIRMAN: Yes.

MR. BERGER: And as a point of clarification, if I might add, the Pen Islands coastal caribou, also the forest dwelling ecotypes, are not listed as threatened by either the Ontario Ministry of Natural Resources, Environment Canada or by Manitoba Conservation. And just to avoid maybe potential confusion with part of the Shamattawa presentation, we will be filing into evidence regarding the designation of the woodland caribou on the Ontario side of the border, and with respect to their potential declines or increases. And I'm just talking about the Pen Islands caribou. Certainly the recent historic evidence is to suggest that they are increasing, however there are potential issues

with respect to harvest and sustainability. And I just would have liked to point that out to the Commission.

THE CHAIRMAN: Thank you, Mr. Berger. We'll take a break until about 11:00 o'clock. As I noted, the panel will look at our questions and see what any remaining questions we might have and we'll address them at that time.

(Proceedings recessed at 10:44 a.m. and reconvened at 10:59 a.m.)

THE CHAIRMAN: Okay. Could we come back to order, please.

We have a few questions from members of the panel. I'm just going to start at the far left end and go down the line. So, Mr. Shaw?

MR. SHAW: Mr. Berger, on behalf of the Partnership, could you outline its plans for the long-term monitoring of caribou in the Keeyask area?

MR. BERGER: Certainly, one moment, please.

As described in the terrestrial environment monitoring plan draft, there are several elements that are proposed to be monitoring. Would you like me to cover all of

them or would you like me just to describe maybe the caribou monitoring?

MR. SHAW: Caribou would be fine.

MR. BERGER: Okay. So with respect to the construction portion of it, for the caribou populations and trying to describe when different types of caribou come into the area or not, there are plans for aerial surveys to be conducted as part of the project related monitoring. And those, the timing of that is of course in winter, every couple of years. We are going to focus heavily on the calving and rearing and habitat use elements. As described, we are going to be conducting tracking surveys.

And one of our working hypotheses is that there will be a loss of affected habitat as a result during the construction stage, and caribou may be affected from two to four kilometres away from the generating station. So we'll take a look at whether or not that in fact will occur, and over operation how long it takes for those caribou to return.

And we are also going to be taking a look at mortality as a result of the resource use portion of it to gain information from there. As

well, we can monitor some elements of mortality with respect to the aerial surveys that are going on.

During operation, again, the caribou populations will be monitored using aerial surveys, the calving and rearing habitat use and the mortality.

Now, I might describe to the Commission that in 2010, with the mammals working group, we did take a look at whether or not it would be good to conduct a radio collaring program. Right from the get-go, that was in fact discussed. And part of the problem with this particular area is that because so many caribou come in and out of the project area, it's quite difficult to try and target a small population of resident summer caribou. So what we had proposed at that time is to look at collaring the animals which are calving on Stephens Lake proper, and there are techniques to do that. But with respect to Manitoba Conservation, who participated in that particular workshop, it was left such that we could not collar the animals using that particular technique, it was recommended against it.

As well, some portion of our project

Partnership also indicated to us that that form of collaring was disrespectful to the animals. So there were, in fact, project advisors and others that did definitely want that collaring program to move forward. But considering all elements, including Manitoba Conservation's advice, as well as other concerns, we did not move forward with the collaring program.

MR. SHAW: What was the rationale given by Manitoba Conservation for not wanting to do that?

MR. BERGER: As part of -- I shouldn't speak on behalf of Manitoba Conservation, I'd leave it for them to answer, but what I do recall and what I can tell you is that during the calving period, and I wholly agree that that time is particularly sensitive to the raising of those calves, and it was decided that in order to push them off of the islands into the lakes, lasso them, haul them back onto the shore and collar them in that event, especially cows with calves, would put undo stress on that particular population.

And since working with that Conservation, in fact, we have changed -- the

Partnership has changed the information gathering methods such that we are avoiding actually going on to the calving period, you know, during the main part of the calving period. So we are in fact tracking and putting on trail cameras prior to the caribou actually going onto the islands, and then waiting until the calves are suitably old enough in July to do our follow-up tracking and trail camera work.

MR. SHAW: What about doing the collaring in the fall during the rut?

MR. BERGER: It's very difficult seeing caribou on the landscape during the summer period, unless you know exactly where they are. The rut is during the October period in general. Usually there are no snow conditions, so it would be hard to find animals that way, it would be very inefficient.

MR. DAVIES: Can I just add to that if I could?

There is a number of other monitoring activities that are also going on in the same area. And the Partnership is one among many who have ongoing and substantive management and/or monitoring roles.

With respect to caribou in the region as a whole, and I'm just reading from one of the documents that I have here, range wide management efforts by provincial and federal governments, and stakeholder representation on resource boards, including the Beverly and Qamanirjuaq Management Board, the Northeastern Caribou Committee, and the Split Lake, Fox Lake and York Factory Resource Management Boards are working to manage and monitor the risks related to range wide cumulative effects associated with harvestable caribou populations -- population is working to develop a process that allows for coordination of its activities with those of others involved in long-term caribou monitoring and management in the region as a whole.

MR. SHAW: Thank you. Did I understand you to say that the plan for long-term monitoring sort of started up in 2010, Mr. Berger?

MR. BERGER: The long-term monitoring started up in 2010?

MR. SHAW: Well, you mentioned 2010 as a date that I thought something was initiated.

MR. BERGER: Well, at that time, when we're thinking overall about potential scientific

design and what the potential project effects might be, you are thinking about long-term monitoring. But the terrestrial effects monitoring plan in how to move forward with respect to understanding what the potential effects of the project might be, that's more recent. But we did consider collaring. And with respect to the work that Conservation and the management boards are currently doing, there may be an opportunity more globally to tap into that particular collaring program. And the Partnership, through the monitoring advisory committee, would certainly consider using and understanding the, you know, the radio collaring relationships that have already been developed. And we'd be open to something like that.

MR. SHAW: What resources would the Partnership bring to the table in terms of that type of initiative?

MR. BERGER: Well, as Mr. Davies was describing concerning future monitoring, we are coordinating our Partnership efforts, as described in the EIS and CEA summary. And we have, in fact, now reached an agreement and have a draft terms of reference with respect to how we would like to

proceed with those types of contributions.

MR. SHAW: Has that been filed?

MR. BERGER: We are currently now reviewing that with the Partnership, as well as it has been submitted to the province, because it will require their participation. And as such, we are hopeful that our first meeting is going to be taking place earlier in the new year. So there is a mechanism in place for exactly what you are asking us. And that's the type of thing that we can use as a forum to see what initiatives might be going forward with respect to all aspects of monitoring currently described in the draft terrestrial monitoring plan.

MR. SHAW: Very good. Thank you.

THE CHAIRMAN: Is that it?

Ms. Bradley?

MS. BRADLEY: All right. Good morning.

Based on the terrestrial environmental knowledge or other information, what was the degree of use of Stephens Lake area in the summer by caribou before impoundment? What are you anticipating there?

MR. BERGER: To clarify, you're asking

me what the degree of use was in Stephens Lake prior to impoundment?

MS. BRADLEY: Yes. What information do you have current and what are you projecting?

MR. BERGER: Okay. Historically, our project partners with the Aboriginal traditional knowledge describe the use of the area by caribou, and certainly with respect to Manitoba Conservation and Water Stewardship's information prior to 1990, there were the Nelson Hayes caribou there.

The use of the area was generally described as being higher historically prior to the impoundment of Stephens Lake. And between 1974 and about 1990, we have little documentation of caribou use.

Since 1990, they had been periodically using the islands in Stephens Lake, and the years that we sampled those islands, the variability of use ranges, I believe I stated from about 10 to 50 percent, which not only for a hydroelectric reservoir but for just about anywhere else in Manitoba, this is considered to be high use. It's a good area. That is in addition to the known caribou use apart from the islands in Stephens

Lake. So there are caribou distributed widely over the landscape and they are using these sparsely treed peat bogs as I described.

In terms of the future, we are predicting, during the construction period, a decrease of habitat effectiveness within two to four kilometres of the generating station, which would be monitored, and we would expect that there may be some loss of effective habitat, 500 metres, a thousand metres around these types of features in the future. But caribou are anticipated to come back. And as I have demonstrated in the presentation, there are currently caribou using habitat adjacent to the existing generating station. So that's some proxy information that we have used to improve our future predictions.

MS. BRADLEY: Okay. So a quick further to that, in Stephens Lake and Gull Lake, there are birthing islands?

MR. BERGER: I'm sorry, I didn't hear the last part of your question?

MS. BRADLEY: There are birthing islands in these lakes for the caribou?

MR. BERGER: Yes, that is correct.

MS. BRADLEY: And what is the

projected effect in terms of loss for the birthing islands?

MR. BERGER: In Stephens Lake alone?

MS. BRADLEY: Both.

MR. BERGER: For Stephens Lake and Gull Lake projections? The total loss of habitat projected for the Gull Lake area, or the future Gull Lake reservoir, is a total of 302 hectares. That includes -- and that's the physical habitat loss only, so that includes peat land complex, as I believe, about 69 hectares, as well as the portions of the existing islands within Gull Lake. But as I indicated in my presentation, there will be replaced, albeit with smaller islands, but there will be more islands in Gull Lake to select from.

I would have to get back to you on the potential loss of effective habitat in Stephens Lake. But in Stephens Lake we aren't projecting any physical losses or changes of those existing islands within Stephens Lake.

MS. BRADLEY: Thank you. A further question, would you agree that the caribou seeking the calving islands or areas would likely avoid areas of large disturbance activity such as the

construction sites?

MR. BERGER: Yes, that's certainly what we're predicting as part of the construction related activities, that those sensory disturbances that the caribou have with respect to people and machinery and so on and so forth, that's what I mean by loss of effective habitat. So there would be a zone whereby caribou may exclude themselves, and they would look for alternate habitat that would be available to them, either in the islands in Stephens Lake, or in sparsely treed calving complexes. And that would be temporary during the construction period, and we do anticipate that caribou would return.

MS. BRADLEY: So to follow up on that, are there findings on how far away caribou seeking calving areas would want to be from such disturbances?

MR. BERGER: As Dr. Schaefer had described, as well as information that we do have from Wuskwatim, for example, adjacent to the access road there was a loss of effective habitat of two kilometres. But with respect to site fidelity, because caribou can move, I believe the average site fidelity is about 23 kilometres. So

that's where, if a cow ends up on an island and it happened to be disturbed, on average it could seek out an island in a bog or an island in a lake of about 23 kilometres. But we do have some limited information from conservation collars. And the site fidelity range that we have from the limited number of collars is from two to 60 kilometres.

So you can imagine they do have some flexibility. But there is site fidelity and they have, you know, a limited ability to move but they do have like 23 or more kilometres that they can search for suitable habitat.

MS. BRADLEY: And further to that one then, are there any potential disturbance overlaps with Conawapa?

MR. BERGER: One moment to confer, please? Thanks. To clarify your question, you are interested in the summer residents or are you interested in all caribou?

MS. BRADLEY: I'm sorry, repeat that please?

MR. BERGER: Are you interested in an answer with respect to summer residents or are you interested in the overlap of Conawapa for all caribou?

MS. BRADLEY: I'm interested in the whole.

MR. BERGER: In the whole?

MS. BRADLEY: The entire.

MR. BERGER: I'll provide you with a two-part answer.

MS. BRADLEY: Thank you.

MR. BERGER: With respect to the summer residents, certainly the range that was considered were zones five and six, which did not include Conawapa. However, we did consider the overlap such as the sensory disturbances related to the construction of, you know, potential future Bipole and things like that. And we also know from filing CEC 37 A, that with the radio collared animals as part of the Bipole project, if you look at a broader area, those animals are -- the summer resident animals, when I described the 41,000 square kilometre range, do overlap with Conawapa. So also we have further information in CEC 103 A with respect to Conawapa overlap.

With respect to the Pen Island animals coming through, certainly we have to consider the population, where does this population travel to or go? And that range is quite considerable into

Ontario and into Manitoba, generally, usually during late fall and in the winter period. So those particular animals could be subject to broader related disturbances.

However, when we do take a look at what our thresholds and benchmarks might be for all caribou, we are looking at things such as habitat loss as measured by linear feature density and fragmentation. And those particular effects east of the study area tend to become smaller than with respect to the Keeyask regional study area.

MS. BRADLEY: Okay. One last question. Has the area from the 2013 fires, I believe that's, what, about 100,000 hectares or so, been incorporated into the percent total disturbance? And if it has, then what would the current total now be for the regional study area?

MR. BERGER: If I may? For caribou, the 2013 fire has not been incorporated into the percent total disturbance. And I would ask that Dr. Ehnes expand on our understanding of the 2013 fire and what those effects might be.

DR. EHNES: Yes. I mentioned earlier in testimony that some of those fires were still burning into late summer. And since then, we have

been able to acquire satellite imagery for two of the fires. And from that imagery, we have been able to map how much of the area inside of the disturbance -- or inside the polygon that Manitoba Conservation produces that was actually burned. Inside that polygon, you've got water and then you've got the area skipped over. So in two of those fires, about 70 percent of the area burned. And using that average area burned, applying it to the other fires, we have come up with an estimate of the total area burned, which will be updated once we have satellite imagery for the other fires. Part of the problem was there was a lot of cloud in the fall. So on that basis, the total area disturbed will be updated.

What I was trying to illustrate earlier, when we report disturbance, it's always for a particular year or a particular point in time because fires -- large fires occur, across the boreal 3 percent of the fires are responsible for 97 percent of the area burned is the rule of thumb. So it's the really big fires that happen in a small proportion of the years that account for the majority of the area burned.

So if we look at the information that

was included in the EIS, that percentage of the area burned was as of -- I don't recall, subject to check, it was either 2008 or 2010. And the years before that, the area that was burned was less than average. So the amount of disturbance in previous years was higher -- or the amount of fire disturbance -- I'm trying to find a good way of explaining this -- the amount of fire disturbance had been declining over time up until the year when it was reported in the EIS. So this pattern I talked about, large fires, percentage disturbed goes up, then it gradually goes down, jumps up again.

So this 2013 was one of those years where it jumped up again. And if you look at a map of where the fires occurred and if you go back to -- I have a slide here of fire history, if we could pull that up? Slide number 7, please?

So this shows areas burned by decade in which the fire occurred. The large fires that are right in the Keeyask area, they are in the areas where there hasn't been recent fire. So the pattern there is this shifting mosaic of areas burned. They get older over time. And as new areas burn, the areas that burned a long time ago

are -- or that burned recently are getting older and then coming into that greater than 40-year age class.

MR. BERGER: So one might imagine for caribou, looking at this same map, that there are areas predominantly on the south side of the Nelson River that are of older age classes, where caribou would have more of a tendency to live and utilize habitat. And we do know from the collaring information that we have available that a lot of the animals of those limited sample size of animals are moving further to the east.

And as you can tell also from the fire map in the yellow/beige colour, that those are the areas that are of older age classes that caribou would have a tendency to use more. So the caribou, just with respect to the fire, will find or shift their ranges over time, as Dr. Schaefer described, with fire. So they will move.

And you can see it demonstrated on this area that there are many areas within the Keeyask region and outside of the region that are available to caribou to move and to utilize as habitat.

MS. BRADLEY: Thank you for that very

full response. I think it's very important for the work here and for us on the panel to have the updated information, because that was such a very large burn and the impact will be notable. So I believe it is important that we do have an updated assessment of the sustainability of the caribou due to the event this past summer.

THE CHAIRMAN: Before I turn to Mr. Nepinak, just following on Ms. Bradley's last comment, when do you think you might have that update done?

DR. EHNES: I can speak to the fire disturbance itself. I think we can have that in fairly short order, within the next week or two.

I'll pass the mic to Mr. Berger about the caribou analysis.

MR. BERGER: Certainly it's important to understand where this particular fire is. And as part of the project, we would expect as part of the natural disturbance regime, for caribou to shift from those particular areas. We described and captured that existing fire regime within the Environmental Impact Statement. And as I described to you in testimony, that there will be times where the fire regime will certainly be

higher, and it will be certainly lower over time. So I think moving forward, maybe with monitoring and developing those monitoring plans, it will become part of the information needed to look at caribou and where they might shift to.

So with respect to understanding and maybe coming up with a number of how the current disturbance regime is with the 2013 fire, that certainly could be done. And I would have to confer, and given a time estimate needed for that, but it wouldn't take very long to do. If that's what the Commission would wish?

THE CHAIRMAN: Thank you.

Mr. Nepinak?

MR. NEPINAK: Mr. Berger, if we could turn to page 136, please? I want to ask you on the islands, and be specific with Gull Lake.

MR. BERGER: Okay. Map number 136 or page 136?

MR. NEPINAK: It's slide 29 on Mr. Berger's report, page 136 of the whole report.

So what we see here is the calving distribution, right?

MR. BERGER: The potential calving.

MR. NEPINAK: Okay. And we can see

all the whole area and this and that. So if we can go to the next slide, please? And this is going to take us right into Gull Lake. We can see the orange area is the islands existing as they are now?

MR. BERGER: Yes -- sorry, the orange is the existing as they are now, correct.

MR. NEPINAK: Right. And we're going to lose all the ones in the rapids and the one down the lake there. So green is what we're going to be ending up with?

MR. BERGER: Correct.

MR. NEPINAK: And how are we going to get the females to go to the other islands that are going to be made, and how deep is the water around those islands? Because if I understand it, right now they are using the islands in orange for calving, and those islands are in the middle of the water where it's the deepest?

MR. BERGER: Correct. So if I could describe what might happen over time more completely. With respect to the orange islands currently at Keeyask Generating Station, two of those three islands are verified and are being used. And in some respects, that surprised me a

little bit because it's right next to the rapids, so it was a little bit dangerous for caribou to actually occupy those particularize lands. But during the construction period, depending how far away some of those islands are, they may or may not be used by caribou. So Caribou Island, for example, is four kilometres away from the Keeyask Generating Station at its closest point. One thing we have to keep in mind as we move forward with monitoring is that now that island is actually burned. So as a result, maybe caribou won't be there. We have to take a more careful look.

But after the construction is completed, and if those caribou are displaced during the construction period due to the sensory disturbances, they are actually looking for alternative habitat. They want to calve on a yearly basis, and there are alternative habitats available for them to use.

So with respect to when it's flooded, and as the islands are formed as a result of water surrounding those islands, caribou, over time, and based on the site fidelity information that both Dr. Schaefer and I described to you, they don't

necessarily have to calve in that same place.

And caribou are always searching for suitable places to avoid predators, which is the main driving mechanism.

So as these islands are surrounded, we don't expect any major changes or obstacles in topography that the caribou can't, for example, climb up onto these islands. And they certainly will change over time with respect to erosion, but these are topographic features which are raised above the water.

So caribou are great swimmers, they are going to find these areas. They are going to swim out to them, as they are discovered over time, and we predict them to be used just like our proxy area for Stephens Lake. So at some point between 1974 and 1990, where people didn't really talk about caribou using those islands, and my understanding from the project Partnership is that they weren't used, it did take some time for those caribou to come back and find those islands. We don't know if that, you know, 15 year period or so, if that's what it's going to take here, but it could be done very quickly or it could take some time, and the caribou are going to find these

islands and calve on them.

MR. NEPINAK: Exactly how many caribou are we talking about that are using the islands right now?

MR. BERGER: In the area in Stephens Lake, as I indicated, there is about 20 to 50 caribou, of which some of those are bulls just using the islands for loafing habitat during the summer, and for them to escape predators and to escape bugs, et cetera.

Right now there is only Caribou Island, as well as the Gull Rapids islands that we know of, and I expect Tea Island as well. We actually didn't set foot onto Tea Island, which is that small orange dot northwest of Caribou Island, and it's a smaller island. With respect to our project Partnership and the cultural sensitivity of that island, we were asked, or at least our crew was asked, not to set string or step foot on that island. But I have personally seen a caribou swim from the north shoreline to Tea Island. So we suspected possibly a caribou, either a cow or bull, would have been using that island as well.

So there would have been four islands that I know of in this area for sure that we could

verify that caribou occurrences happened, either cows or bulls, over the period of study.

MR. NEPINAK: So do we know for sure that the same caribou are coming back to these same islands? Is that something that they do?

MR. BERGER: They certainly can. That's a possibility. But, you know, as I indicated, it's like from two to 60 kilometres away. We can't tell in individual caribou between years coming back without some sort of a permanent mark like a radio collar. And one thing that I can tell the Commission with respect to the collaring that Manitoba Conservation and the resource management boards did, and supported, is that there was one collared animal on Caribou Island that was captured after spending about two months on that island with one of our trail cameras. And we did not capture a subsequent animal in subsequent years in 2012 or '13, for example. And I'm not sure what happened to that particular animal, but we only captured one collared animal one year on Caribou Island.

MR. NEPINAK: Okay. Mr. Shaw had mentioned earlier about monitoring. And I'm quite obviously visibly Aboriginal, and we use oral

traditions. Have you put, since the Partnership for Cree Nations, are you listening to the old people, the elders, and some of the oral traditions that were passed onto them about the caribou and what the caribou did, just along those lines?

MR. BERGER: Absolutely, yes.

MR. NEPINAK: All right.

MR. BERGER: As part of the mammals working group, which had elders in the mammals working group as part of the Environmental Impact Statement, we seriously took a look at all of the Aboriginal traditional knowledge that was offered.

MR. NEPINAK: And I asked simply because we don't have caribou in the area I come from, but stories were told to me as a young person by my grandfather, my father. And they would always say kai'itai'got, which means this used to happen. Or from a long time ago these are things that happened. It's good knowledge, it's good monitoring, it's just a different kind of monitoring. Thank you very much.

MR. BERGER: Yes. And with respect to the monitoring, and moving forward, certainly the approach that the caribou committee will take as

part of that monitoring program will include all aspects of monitoring with respect to Aboriginal traditional knowledge and western science.

MR. NEPINAK: Thank you.

THE CHAIRMAN: Mr. Yee?

MR. YEE: Thank you, Mr. Chairman.

I have a few questions that will be directed to Ms. Wyenberg, so I'll give you a chance to get your microphone. I'll refer to a couple of slides but I don't necessarily need you to go to them. If you need to, you can.

My first question is in your terrestrial invertebrates amphibians and bird section, it happens to be slide 30 of that section, you talk about the terrestrial mitigation implementation plan. I'm just wondering, has this plan been released yet, or what's the status of that plan? It's slide 30 on page 93.

MS. WYENBERG: The details of this plan are currently in development, and we anticipate that this plan will be formed over the next number of months and during construction.

MR. YEE: Okay, thank you.

Moving into your next section on mercury and wildlife, I just have a few questions

on that. The only slide I'll refer to is I guess slide 40. It's on page 103. It's the hazard quotient analysis.

You indicated that the hazard quotient analysis calculation is based on ingested mercury, the ratio of ingested mercury to a known effect level. I was just wondering, is that known effect level the lowest observed adverse effect level?

MS. WYENBERG: I'll just take a moment to confirm.

Yes, that's correct.

MR. YEE: And can you describe how these values were derived for the particular hazard quotient analysis that you undertook?

MS. WYENBERG: I believe some of this discussion is in terms of how we arrived at -- our toxicity reference values was captured in the CEC round one IR 47, where we described what levels we used and which -- where the levels came from in terms of the references. So there is a listing. I can go through it for you because we did the hazard quotient on a number of species.

MR. YEE: No, that's fine. I missed it when I was looking for it. That's fine, thank you.

MS. WYENBERG: Okay.

MR. YEE: You identified on slide 42 that there is potential localized adverse effects on individual otters. Can you reiterate the reasons why this doesn't translate into a population effect and why it's just the individual otter issue?

MS. WYENBERG: I'll let Rob, Mr. Berger answer that question for you.

MR. BERGER: Yes, I can expand on that. You can imagine what the otter population might look like with respect to the regional study area, and where otters might go to feed, which may include, you know, the Gull Lake reservoir and Stephens Lake, and the numerous otters that use the creeks and other rivers in the area. So you could imagine a widespread population. And otters are very wide ranging, they cover a lot of territory. Some of them might live, some being individuals, living adjacent to the proposed reservoir as well as Stephens Lake. And those individuals, if they happened to exclusively feed on fish as a result, and mainly in the Gull Lake reservoir, or with contributions from Stephens Lake, you know, those individuals may be at risk

if they exclusively feed over a very long period of time. But as part of nature and as part of how otters tend to move over the landscape, as well as the rest of the population that wouldn't even be exposed to it, we are in fact potentially talking individuals as opposed to population.

MR. YEE: Thank you.

I guess just as a follow-up, Mr. Berger, you could probably answer this question. In terms of, I gather from previous questions that were asked and responded to, that local otter and mink populations aren't part of the overall monitoring program, but there is a voluntary program that would collect samples from these particular mammals. I'm just wondering, is there a certain amount that has to be collected for statistical validity in terms of, is there, when you're looking for something in terms of a potential impact, say the human population consumption or whatever, is there a particular number you're looking at, or how is that going to be statistically valid as it relates back to say your non-voluntary program where you're monitoring the fish for methylmercury?

MR. BERGER: With respect to, you

know, animals that are country foods, as indicated in the EIS, that we're not expecting any increase with respect to these animals. And that part of the program is certainly voluntary and it was a concern expressed in the mercury and health working group. But we will be taking a look at it. But with otter and mink and with the science behind knowing that there will be an increase in these, we can call them sentinel species for otter and mink, we are going to have to take a careful look at the local and the regional populations with respect to monitoring those animals over time. And it's certainly going to be of paramount importance to work with local trappers, and as part of the monitoring advisory group, to determine what sort of thresholds there may be with respect to the mercury accumulation in mink and otter. That might certainly -- that would be part of an analysis that could be performed as part of the mercury monitoring, and to take a targeted look at the sample size required.

One thing that we do have to keep in mind with respect to these type of mammals is they are finite and limited. You can't go, I guess crazy sampling very large numbers of animals

because their population wouldn't support that, the high level of effort in that sampling. So you do have to be cautious with respect to the number of animals that we do sample.

MR. YEE: Right, I appreciate that. I guess in follow up, what would constitute a significant effect at population level?

MR. BERGER: What would we be looking for in terms of the potential mercury thresholds on individual otter? I think we can refer to some of Wolfe's work in 1998 which I can supply a reference for, and those are from the force fed laboratory studies that came about as a result of trying to determine what the effects of things, mercury on mink might be. And the animals that were part of that laboratory experimental process, and the lowest observable effects on those animals with respect to muscle, which is one of the things that we're looking at collecting during our environmental assessment process, they did have lesions forming when the muscle was about 7.8 micrograms per gram wet weight. Those were some of the thresholds that we could take a look at.

But in terms of the population effect,

we're not expecting one, as I indicated, with respect to the number of individuals within a reservoir, but we can look at the relationship between the accumulation of mercury in the muscle, liver and kidney, which we have some samples for, and what the projected animal health effects might be.

MR. YEE: Thank you.

MR. DAVIES: I'd just like to add to that. There was some work done in the 1970s in regards to mercury levels in otter and mink for the Churchill River Diversion and Lake Winnipeg Regulation. They found that mercury levels were actually quite high but that they didn't affect their ability to reproduce. So there was no population effects from that. One of the thoughts was that they are eating smaller fish and the smaller fish have lower mercury levels. But, again, the mercury levels were quite high but they weren't high enough to affect their reproductive capability.

MR. YEE: Thank you.

I'm not sure who to direct this next question, it's along the same lines as mercury, it's got to do with Gull Lake. Would you expect

gulls' eggs from gulls feeding in the Gull Lake area to having increased mercury levels?

MS. WYENBERG: Yeah, I think the straightforward answer would be yeah, we would expect mercury levels to be increased in gull eggs in the Gull Lake area.

MR. YEE: I guess the reason I ask that question, again, as a follow-up, can you monitor gulls' eggs for mercury levels, or could you?

MS. WYENBERG: I'm sure it's possible, that it's something that can be done, but I'm not sure what value it would have. Because what we have understood from the literature is that levels can be extremely high in gull eggs in young birds even. And that at high levels these birds are not showing effects, that they are able to handle that mercury load. And quite often, as I indicated in my presentation, one of the main factors of that is the fact that birds are able to remove mercury from their bodies through the growth of feathers.

MR. YEE: Right. I guess the reason I'm asking these questions, they are somewhat hypothetical, but there's a lingering concern in my mind that if the gulls' eggs have high levels

of mercury, and we know Aboriginal people often consume those eggs, and given we are creating artificial islands and more accessibility of these eggs, is that not a potential pathway for human ingestion of mercury?

MS. WYENBERG: That would be a potential pathway. However, that was considered as part of the human health risk assessment, and we did provide information about mercury concentrations in gull eggs, and that was part of their assessment in terms of understanding what would be recommended in terms of consumption, just like was done for waterfowl and fish and other game species that are consumed. It was my understanding from that process that while people could still continue to consume gull eggs, that it was no longer a process that was currently being done, as far as I was aware of.

MR. YEE: Thank you.

No further questions, Mr. Chairman.

THE CHAIRMAN: Now, just following on Mr. Yee's last question I guess, are there any plans to monitor gull eggs?

MS. WYENBERG: There are currently no plans to monitor gull eggs.

THE CHAIRMAN: Thank you.

I have a number of questions and they come out of some different documents. And as I have said before, when you are the clean-up questioner, they might seem random and all over the place. So they will make sense at some point in our deliberations in the new year for certain. So let me go through what I have and see what's still relevant.

This is just simple curiosity. On slide 32, in this same one -- I guess it's in Dr. Ehnes's presentation, so it's not this one, slide 32, page 32. The orange possible footprint area, what is that long straight-ish line running from the south access road quite a ways down?

DR. EHNES: There is a very small borrow area, or potential borrow area at the end of that road, and it's highly unlikely that would be used just because of what it takes to get there.

THE CHAIRMAN: Okay, thank you.

Slide 34, you have a figure of 20 percent ecosystem effects may occur once terrestrial habitat loss reaches 20 percent. Where did that value come from? In the

terrestrial effects supporting volume habitat, 10 percent is used as the threshold for high magnitude effects, and one to 10 percent for moderate effects. So where does the 20 come from?

DR. EHNES: The 20 percent comes from a literature review. So these are studies that were conducted in various places, some of them not necessarily in the boreal forest but in various places where they were looking at what level of habitat loss is needed before you start seeing ecosystem effects. So not necessarily the 20 percent in a study would have been the tipping point, but that would have been the amount of loss where you start seeing effects.

The 10 percent in the EIS is the benchmark we are using, because we are trying to be precautionary. It's less than the 20 percent.

THE CHAIRMAN: Okay, thank you. Then the next four or five pages, pages 35 to 38, you have a number of bar graphs. These relate to the regional study area; is that correct?

DR. EHNES: I'm just going to wait until he pulls them up.

Yes, this would be for the terrestrial habitat regional study area, which is study zone

five.

THE CHAIRMAN: Okay. Thank you.

Pages 52 and 53, you talk about the project will not substantially change the proportions of any native habitat types. What does substantially mean?

DR. EHNES: In this context, subject to check, I believe it was a one percent change.

THE CHAIRMAN: One percent?

DR. EHNES: Yes. So if black spruce on blanket bog in the existing environment was 23 percent of the total terrestrial habitat, a 1 percent change would be 24 percent or 22 percent.

THE CHAIRMAN: Now, this was probably covered just a few minutes ago in respect of the recent fires. But will these recent fires, and I know you said you haven't done an updated assessment yet, but do you anticipate that it will push anything beyond the thresholds?

DR. EHNES: No, I do not.

THE CHAIRMAN: Thank you.

DR. EHNES: In fact, because 2011 and 2010, there was almost zero area burned, and in the years, four or five years before that the area

burned was considerably less than the average annual, there has been a lot of accumulated area that could be burned in order to bring it back up to where it was in say 1986. So going through this cycle, we were at a low. So the 2013 burns were just bringing us back to the top of the saw tooth.

THE CHAIRMAN: Thank you.

On page 61, you indicate that with respect to the context for wildlife assessments, it's not easy to assess wildlife habitat changes because it requires historical mapping to quantify available habitat for some VECs.

Are we to assume from this that this historical mapping means pre development?

DR. EHNES: Maybe I'll start with a clarification. The intention of the slide was not to imply that historical mapping is required in order to do an assessment for any of the wildlife VECs. This was pointing to the difficulties of developing pre development mapping. You need historical photos and there is a fair bit of effort required. So in terms of doing an assessment, it's always a decision, you know, what is a reasonable level of effort to undertake? If

you're not close to a benchmark or a threshold for something, then you don't want to spend months developing data that just gives you a more precise answer that you're not very far -- or that you are far away from it.

THE CHAIRMAN: Thank you.

I have a couple, at least one or two questions for Ms. Wyenberg about insects.

Don't some insects have some very specialized habitat requirements?

MS. WYENBERG: Yes, that would be correct.

THE CHAIRMAN: Are there any provincially rare invertebrates potentially living in the region, such as dragonflies?

MS. WYENBERG: There is no -- there is no potentially rare listed species that occur within our region or have potential to occur within the region based on mainly the habitat.

THE CHAIRMAN: How about dragonflies?

MS. WYENBERG: Yes, dragonflies occur. Yes, there are a number that occur within the region for sure, but none of the listed or rare or sensitive species.

THE CHAIRMAN: Thank you. Now, is the

overall assessment of habitat loss of 4 percent relevant to such species?

MS. WYENBERG: Relevant to which species?

THE CHAIRMAN: I guess maybe you answered it in my second question when you said there aren't any rare --

MS. WYENBERG: That's correct.

THE CHAIRMAN: Okay, thank you.

Now, the rest of my questions -- I shouldn't say the rest of them -- the next chunk of my questions are going to relate to IR CEC 102 C, which is about cumulative effects, and I have a few, so I'll go through them in order really. It might be a little disjointed.

On page 2, do you have that -- before I go on, if you have it in front of you? Thank you, Dr. Ehnes. On page 2 under Summary of Results, you talk about an eastward expansion of study zone five or study zone four, depending on the VEC, would reduce adverse effects from past, current and future developments on a terrestrial habitat and core area.

Then over on page 11 at the top of the page --

DR. EHNES: Excuse me?

THE CHAIRMAN: -- you talk about total --

DR. EHNES: Are you referring to the additional information filed or the original?

THE CHAIRMAN: I'm sorry, yes, it is the additional information.

DR. EHNES: Okay, sorry, I'm just going to grab the document.

THE CHAIRMAN: Yes.

DR. EHNES: I have it now.

THE CHAIRMAN: Okay. The first part, and to me there seems to be a contradiction, so I'd just like to ask you to explain it. The first paragraph under Summary of Results talks about reducing adverse effects. And then a sentence or two, or a few lines on, leaving a greater proportion of unaffected habitat.

But then on the top of page 11 you talk about 82 percent, 92 percent, but then dropping down to 82 percent and 81 percent. So it seems to me that there is lower amounts of affected habitat -- or unaffected habitat, pardon me. If you could explain that to me, it might help?

DR. EHNES: I certainly will try. I'm having a little difficulty finding the words you are referring to.

THE CHAIRMAN: It's right at the top of page 11 of 25, so page 2 and 11.

DR. EHNES: I have a map for page 11, so I must have the wrong --

THE CHAIRMAN: This is additional information for CEC round two, CEC 102 C.

DR. EHNES: My apologies, Mr. Chair.

THE CHAIRMAN: No, no problem. You don't seem to have it?

DR. EHNES: I apologize, we don't seem to have the hard copy here.

THE CHAIRMAN: Okay. Well, the Commission has, and I will state it again, probably later today, that we sort of hold in reserve the opportunity to call anybody back at a later date, and we will identify, we'll probably do it on Monday, we'll identify for the Partnership two to three areas we wish to canvass. So perhaps we shall leave this one till then.

DR. EHNES: If you wanted to reread it, I can try to respond just on that basis.

THE CHAIRMAN: Well, I have a few out

of that particular document, so perhaps I'll just move on.

DR. EHNES: Okay. We have found a digital copy.

THE CHAIRMAN: Have you found the --

DR. EHNES: A digital copy of it.

THE CHAIRMAN: Oh, a digital copy, okay. I thought you said additional. Okay.

So on page 2 of 25, the first paragraph under summary of results, and then on page 11 of 25, the top of the page.

DR. EHNES: Okay, I'm going to have to, because I'm flipping through a digital document.

THE CHAIRMAN: Yeah.

DR. EHNES: Okay.

THE CHAIRMAN: So what do you want me to do? Read what --

DR. EHNES: Yes, please.

THE CHAIRMAN: Under Summary of Results, you write:

"An eastward extension of study zone 5, or study zone 4 depending on the VEC, would reduce adverse effects from past, current and future developments

on terrestrial habitat."

And then a few lines down, a sentence finishes off:

"...leaving a greater proportion of unaffected habitat."

And I understand that concept. But then on the top of page 11, the paragraph starts:

"As demonstrated in table C, if study zone 5 in extension area A are combined together..."

And then through that paragraph, the numbers seem to indicate a lower proportion of unaffected area. Like it drops from 82, and then 92, and ultimately 82 and 81 percent. That seems to me to be a lesser proportion.

DR. EHNES: So the first long sentence is talking about core area in the three different combinations. So the percentage of core area is -- we actually have several things happening in this paragraph. It's past, current and future. Okay. I think maybe I'll just try and explain what's going on --

THE CHAIRMAN: That would help.

DR. EHNES: -- and not dwell on the words.

The level of intactness in study zone 5, which is the Keeyask regional study area, is let's say 82 percent. The level of intactness in the eastward extension is higher because there is less existing development. So then when you combine the two areas, it results in a percent intact of somewhere in between.

THE CHAIRMAN: I understand that. But then you see the numbers on page 11, the numbers seem to me to be dropping when they are talking about combined effects. It comes down from 82 and 92, to then 85 and 90, and 81 and 82. Am I totally confused? It seems to me that the numbers, as you expand, the numbers are coming down, which seems to contradict what's on page 2.

DR. EHNES: What is happening is studies, the eastern extension will have a lower value than study zone 5, but the combined value for intactness and total terrestrial habitat loss is somewhere in between the two because of the averaging effect, so to speak.

THE CHAIRMAN: Okay. We'll move on for now. I'll try to sort it out in my head, and if I can't, we may come back to it at a later date, but we'll see.

DR. EHNES: And I'll have another look to see if there's some miswording or confusing wording in the sentence. It's a pretty long sentence, I'll give you that.

THE CHAIRMAN: Let's turn to page 3, almost right in the middle of the page. In the middle of the paragraph that starts "In conclusion," there is a sentence that starts with "However".

"However, while total terrestrial habitat and core area are often used as a coarse filler for evaluating and monitoring ecosystem wildlife effects, a more refined and reliable analysis using detailed habitat mapping will be required in the future."

Why not now?

DR. EHNES: This is referring to an environmental assessment for a future project which would be looking at that other future project's effects on the wildlife VECs in that region, or the populations of those VECs in that region. And the Keeyask project is not anticipated to affect the populations of those species, so we wouldn't be doing a detailed

mapping for effects on species to the east of study zone 5. But when a future project goes ahead, it would do detailed analysis and modeling just like we have done for the Keeyask project.

THE CHAIRMAN: Okay. Thank you.

Page 13, there is a table A. Now, at various times you have talked about, and this may just be a misunderstanding of this table, but you have talked about affected and tolerance areas in the ranges of 4 and 6 percent. But then we have, particularly beside common nighthawk, olive-sided flycatcher, rusty blackbird and beaver, we have areas that seem to have substantially more problems, 75 percent, 79 percent, 82 percent, 80 percent. Could you just explain what this is?

DR. EHNES: I think I will pass the microphone on to Mr. Berger or Ms. Wyenberg, those who are dealing with wildlife VECs.

THE CHAIRMAN: Sure.

MR. BERGER: With respect to beaver, certainly the change from pre-development conditions to total available habitat is certainly a lot more than, for example, some of the more wider ranging species like caribou and moose whose limited -- there are limited physical habitat

effects available to it. So, for beaver, for example, at the range of 80 percent is certainly of a concern. However, with respect to the Keeyask project itself, we are highly confident on the number of beaver that remain in the region, as well as the number of beaver population-wise that will be affected by the project.

So our estimates of, as stated in the EIS, of 250 lodges, and you can imagine four beavers per lodge, of the thousand individuals that are located in study area 4, we would expect 21 of those lodges to be affected. So there certainly has been habitat loss and habitat concerns related to the historic flooding of Stephens Lake. What does remain is a strong beaver population in the remainder of the local study area, and that is not going to be affected much as a result of the Keeyask project.

So that was the rationale that we used for predicting that the population effects on beaver, and given that beaver are somewhat resilient and can create their own habitat to these effects, we came to the determination or conclusion that there would be no significant effect.

THE CHAIRMAN: Thank you.

Ms. Wyenberg, can you comment on birds?

MS. WYENBERG: For the three SARA listed species that you have mentioned, habitat is not considered a limiting factor affecting their global populations in terms of breeding habitat. The threats to these species lie within the loss or alteration of their overwintering habitat. So while these numbers are showing that within the region, which was zone 4, was the conservative region that we looked at for all of our species at risk, the numbers do appear high.

If we did use zone 5, which would have been acceptable, the numbers wouldn't have been as high. However, overall, because breeding habitat isn't considered to be the limiting factor affecting these species that, you know, cumulative effects in combination with the project, past and future projects would not have a significant effect on these three species.

THE CHAIRMAN: But all these numbers seem to indicate that they exceed the threshold. You had talked earlier about thresholds of 6 and 10 percent. So these do exceed the threshold

but --

MS. WYENBERG: Yes.

THE CHAIRMAN: -- you're saying it's not going to be a big concern in the long run?

MS. WYENBERG: Correct. And that is because the threshold, or the benchmarks I should say, they are benchmarks that we used in our assessment for looking at effects on these species, were based on changes to current conditions. Those benchmarks of 10 percent were based on that. They weren't based on changes relative to pre-development or historical conditions.

THE CHAIRMAN: Thank you.

DR. EHNES: If I can, sorry?

THE CHAIRMAN: Dr. Ehnes?

DR. EHNES: If I can add to that? I think I might have misinterpreted your original question, which I am thinking may be why does terrestrial habitat use 10 percent for a benchmark, and some of the other species might use different benchmarks, or when we look at say the habitat loss for beaver, it's greater than 10 percent, so is that a problem? I think you'll find in the EIS, and certainly in the topics I

presented, that different indicators have different levels for the benchmarks, depending on what they are. So some species can tolerate a higher level of habitat loss than others. So 10 percent wasn't intended to be an across the board benchmark for all species, or each species individually. It was intended to be a benchmark for the ecosystem as a whole, and ecosystem functioning, to serve as a precautionary benchmark for the system as a whole.

And if we're looking at regional ecosystem function, intactness and total terrestrial habitat were two of the indicators we were using for that. So you see different species in the EIS, when they talk about the benchmarks they used to evaluate magnitude, they actually in the EIS state what those different percentages are.

THE CHAIRMAN: Okay, thank you. I think this might be my final question. Don't hold me to that though.

If we go to page 21, just as a sort of a reference, slide 21?

First, I just note that it strikes me as odd that the study zone goes about four and a

half times farther west than it does east. And this seems to be because it's a boundary between the Hayes River upland eco-region to the west and the Hudson Bay lowland region to the east; is that correct?

DR. EHNES: The approach to finding the study zones was to start off with the project impacts. So that would be a combination of the footprint areas, the areas that would be cleared, disturbed, flooded. But then also to look at areas where there would be a large increase in traffic. So on highway 280, between Thompson and Gillam, there is expected to be a large increase in traffic. So that's why the study areas go that far west.

And then in terms of determining the size, I talked about using the fire regime to determine the size of the study area. So when we were delineating the boundaries, we started at those project impact areas and then expanded outwards using that boundary which coincides with the boundary between two eco-zones. And I showed some slides about how the fire regime is different to the east, the kinds of habitat is different, the service materials, there are a lot of

ecological differences.

So a standard approach in defining study areas is to lump things, or as you are moving out, to put things together that are more similar rather than more different. And that's the same strategy that the boreal woodland caribou recovery strategy uses. They define population ranges in terms of areas that have similar ecological factors that determine the life requisites for that population. And I think it was mentioned that the minimum, or the typical minimum size is about 10 to 15,000 square kilometres, which is the size of our study zone five.

THE CHAIRMAN: I just observed that when it comes time to do the environmental assessment for Conawapa, I hope they don't cut the boundary off by eco-region, because everything upriver to the west would get totally left out. So I know that we're not here to review the Conawapa project yet, but I would hope that there's not such a limited, or the limitation isn't at the same point for the same reason between eco-regions.

It looks like Mr. Davies wants to jump

in here.

MR. DAVIES: I just want to say that's where some of the VECs, where they extended beyond the boundaries of this, I think they were looked at. One example is water quality where we looked at the effects of increased TSS levels all the way to the estuary. So wherever the effect was felt, it was included in the boundaries.

DR. EHNES: And similarly, any projects that were outside of these boundaries were considered to the extent that they affect the VEC populations that are in these study zones. So a practical purpose of defining these study zones was to be able to quantify habitat, how much habitat would be affected.

THE CHAIRMAN: I think part of the problem that some of us have is that, I mean, we all know that Conawapa is apparently very shortly on the horizon. And this study zone leaves it completely out. And just by changing the boundaries, just from a visual perspective, it probably would have helped a lot of parties to this process if the study zone had included Conawapa. But then the conclusions may well have been the same that you've got here. But it's just

the way it's presented that can be a problem. That's just an observation.

That concludes my questions at least for today.

Mr. Bedford?

MR. BEDFORD: I have one question on redirect.

Mr. Davies and Dr. Schneider-Vieira, because some of us became confused about 10 days ago, can you tell us, please, what you discovered at Gull Rapids about sturgeon spawning and what conclusions you drew from your discoveries?

MS. SCHNEIDER-VIEIRA: I'll answer that. Just by way of clarification, there was some discussion about whether or not Gull Rapids is spawning habitat for lake sturgeon. And in the EIS, it's very clear that Gull Rapids is spawning habitat for lake sturgeon.

I would just like to refer the Commission to page 6-19 of the aquatic environment supporting volume. And I will just read a small amount, just to indicate the information that was used to determine that lake sturgeon do spawn at Gull Rapids.

"Maturity assessments conducted during

spring gill netting studies indicate that lake sturgeon spawn in the vicinity of Gull Rapids. In the five years that sexual maturity was assessed, three pre spawning females were captured below the rapids. Four of 11 lake sturgeon captured within the lake rapids in 2003 or 2004 were males that were maturing to spawn or spent. Several more males were captured, one or more times in pre spawning or ripe condition below the rapids. Lake sturgeon seemed to congregate in the area immediately below the rapids in late May and early June and then move into the rapids once water temperatures were suitable for spawning. Water velocities and turbulence made the Gull Rapids area difficult to fish in terms of both safety and setting gill nets effectively. For this reason the rapids proper were only fished in 2003 and 2004, two relatively low flow years."

Now, I just would like to add that I did indicate that in the most recent years of study, we have not found any sturgeon that were maturing to spawn when we did spring gill netting work. The sturgeon that we found that were maturing to spawn were over five years ago.

THE CHAIRMAN: Thank you.

We do have actually a couple more questions just following on from responses in the last few minutes.

Just going back probably to Ms. Wyenberg, I asked questions about these figures, the 75, 79.8, et cetera. And you said that habitat loss wasn't a limiting factor. If 20 percent habitat loss is not significant in magnitude, for example, for common nighthawk, what amount of habitat loss, or what amount of habitat would need to be lost for a moderate or large magnitude effect?

MS. WYENBERG: Based on the literature that looks at habitat loss having an effect on species diversity, where either a species experiences a drastic local decline in population or it becomes extirpated, or no longer occurs within a region, based on that literature you

would have to lose between 70 and 90 percent of the available habitat.

So a moderate to high magnitude effect would occur somewhere before that would happen. We would be looking at possibly a 50 percent to 60 percent loss. In some of the other impact assessments that I have looked at that examine pre development levels and look at habitat change relative to pre development levels, the thresholds that they are using, or benchmarks rather, are about the 60 percent mark, that if you lose 60 percent of the habitat, then you would want to take a closer look and perhaps modify your mitigation or potentially have a significant effect on the population. That's not specific to species at risk or common nighthawk, that's just in general, in general terms for birds.

THE CHAIRMAN: Thank you.

Mr. Nepinak had a question just for clarification, I believe.

MR. DAVIES: I just wanted to add to that, in some cases there are so few birds that are observed. This came up in Bipole also where some of the VECs actually hadn't been observed for a number of years, and the loss of a portion of

their habitat obviously wouldn't have had a significant effect on their populations, since they hadn't been observed for a number of years. You'd have to lose a fairly large portion of that habitat before you'd notice an effect.

THE CHAIRMAN: Thank you.

MR. NEPINAK: In cross-examining last week, or the other week of, I think it was Dr. Schaefer who did the sturgeon.

THE CHAIRMAN: No.

MR. NEPINAK: Mr. Peake. Mr. Bedford, you asked, and I'm also told that the chosen site for creating this artificial lake sturgeon for Young of the Year habitat is a reach of the Nelson River where the flow in the river do not vary hour by hour, day by day, they are in fact stable. And I just wanted some clarification on stable.

I was going to wait actually until later on, but now is a good time apparently.

MS. SCHNEIDER-VIEIRA: Certainly I can answer that question.

The hourly variations that you see in flow happen downstream of the generating station. The place where the Young of the Year lake sturgeon habitat is going to be created, or would

be created if it's required, based on monitoring, is within the reservoir itself. So conditions in the reservoir stay relatively stable. It might fluctuate over a day, up to a metre over a day, but it's a very large, or it's a substantially sized reservoir, so you're not going to get very large changes in water velocity within the reservoir even if the water level changes by a metre.

You're looking at me with this look of total puzzlement. If the Young of the Year habitat is being created within the reservoir --

MR. NEPINAK: I'm sorry, I forgot to put my earpiece in and I'm having trouble hearing. Could you repeat that again, please?

MS. SCHNEIDER-VIEIRA: The Young of the Year habitat that we were discussing is in the reservoir. And the conditions in the reservoir are much more stable than downstream of the generating station. When people speak of hourly fluctuations in relation to hydroelectric development, that is typically related to changes in the number of turbines or units that are operating, so these turn on and off, which means that the conditions downstream of the station can

change quite quickly. However, the conditions within the reservoir itself don't change that quickly.

In the analyses that we did, we looked at everything from fifth percentile to 95th percentile inflows, and the maps showing those velocities are in the EIS. And you would see that even in that enormous range, there are not large changes in the water velocity where the Young of the Year habitat would be created.

MR. NEPINAK: Okay, thank you. Thank you very much.

THE CHAIRMAN: Mr. Berger?

MR. BERGER: Mr. Chairman, earlier a question was asked concerning fire updates and with respect to caribou. And what I'd like to do, as I was unclear as to what commitment might be provided for that type of an undertaking, I would like to commit to doing an undertaking to consider the need for supplying the 2013 fire information as it may affect caribou. So we'd like to take that back, and we will provide you with a response regarding the need for that type of undertaking.

THE CHAIRMAN: Okay, thank you Mr. Berger.

MR. BERGER: Thank you.

(UNDERTAKING 10: Provide 2013 fire information affecting caribou)

THE CHAIRMAN: We'll break for lunch now, we'll come back at 1:40. We're now concluded with this panel. We'll return after lunch with the moving forward panel.

(Proceedings recessed at 12:38 p.m. and reconvened at 1:40 p.m.)

THE CHAIRMAN: Could we come to order, please? Order, please.

During the lunch break the panel did consider the procedural motion that was brought up this morning. We have not come to a resolution on that matter yet, but we do have some more questions for Ms. Whelan Enns, so if you could please come up to this front mic?

Ms. Whelan Enns, I have a number of questions.

Now, you mentioned this morning that part of the problem arose from the scheduling moving back and forth, and we do admit that that did happen. But I would also note that the current schedule, the schedule that identified your witnesses as coming up this Thursday,

November 28th, that that schedule was set on November 1st.

Would you agree with that?

MS. WHELAN ENNS: Yes. I would have to look at the sequence in email to know, given it is the 25th of November now, to know about the back and forth since.

THE CHAIRMAN: Take my word for it, this schedule was set on November 21st, and at least as far as your witnesses are concerned, it has not changed since November 1st.

Can you tell me when you engaged these two particular consultants, Bluestem, Mr. Soprovich, and Coldstream, I believe, the other?

MS. WHELAN ENNS: Yes, Mr. Soprovich works in a variety of projects in a given year. And this is a Whelan Enns Associate's comment, but it goes to the fact that then conversations about his participation here in these proceedings have been verbal since the spring, and the identification of work plan and so on was late spring, early summer. Dancing around, or moving around people's obligations and work schedule is a challenge. So the time for him to -- the

identification of time for him to work on this was a challenge. I would have to look again at the dates on email exchanges to give you a specific date, sir.

THE CHAIRMAN: Can you tell me when you told these witnesses that they would be appearing this coming Thursday? When were they informed of that?

MS. WHELAN ENNS: They were informed of that probably prior to November 1st.

And again, I quite accept what you are saying about the schedule. Some of this has been discussions and some of it has been email, so you are completely right about what you are saying about the schedule. But there was then discussion, particularly with Coldstream, and generally in terms of the Manitoba Wildlands witnesses, whether they might need to move into the first week of December.

THE CHAIRMAN: But I believe that, at your request, you wanted them moved back, Coldstream in particular moved back to November?

MS. WHELAN ENNS: That's right. Moving them was much more complicated than the other witnesses for next Monday, okay, in terms of

being able to move into the first week in December when the two weeks were added into the schedule for December. So that was a little, I guess that was a compromise or a trade-off in our mind. From our office's point of view, though, there was a period of time when there was potentially all four of them in the first week of December.

The preference, of course, on the part of the panel and the Commission overall in scheduling is to have a day that is the same participants' witnesses. So that's part of then what happened in terms of Mr. Soprovich being this Thursday.

That in itself, of course, has been a challenge because of what was finished or completed this morning in terms of the terrestrial panel, and him not having that evidence in terms of the rest of the panel and the rest of the cross-examination.

THE CHAIRMAN: When you informed your witnesses, at least the two for Thursday, Coldstream and Mr. Soprovich, did you inform them that their reports had to be in seven days prior to that?

MS. WHELAN ENNS: Did I initially?

Yes, I did initially, and I again acknowledged that we have made a mistake.

THE CHAIRMAN: What was the mistake?

MS. WHELAN ENNS: Well, the mistake is not being seven days ahead. So, initially that was clear in the communications with them.

If I may, Mr. Chair, I missed a part of your earlier question. The consultants from Coldstream Consulting have been to Winnipeg. The conversations with them started as a result of a series of referrals for, a search for out of province expertise, and the conversations I believe started in May. They were contracted in late May, early June. They were here on the ground for a better part of a week in July. So your questions are exactly the right ones in what did they know, when were they told, and how did the mistake happen in scheduling.

THE CHAIRMAN: When did you receive the reports from these two witnesses?

MS. WHELAN ENNS: We had reports from Mr. Soprovich and from Coldstream last week.

THE CHAIRMAN: What day last week?

MS. WHELAN ENNS: There have been quite a few versions, but what I was basically

saying is we could have in fact filed last Thursday.

THE CHAIRMAN: Why didn't you?

MS. WHELAN ENNS: Because we were all looking, in error, at the November 25th date in our system.

THE CHAIRMAN: Now, you talked about a problem in your office, and is that the problem in your office, that somebody had put November 25th as the filing date?

MS. WHELAN ENNS: Yes.

THE CHAIRMAN: But that's based on information that is now about a month old?

MS. WHELAN ENNS: It is based on the two witnesses for Manitoba Wildlands who were moved into the first week in December.

THE CHAIRMAN: Would it be possible for these witnesses to appear on another date?

MS. WHELAN ENNS: I would say yes, and do my very best to act on that. I have a call booked mid afternoon, our time zone today, to talk to Coldstream. And Mr. Soprovich, of course, is in Manitoba, so that's potentially an easier adjustment. There is really three individuals from Coldstream, if I may, so the third does

present on Monday. And this is Alyson McHugh.

So the challenge in terms of Coldstream and Thursday is that they get on a plane tomorrow because, of course, there is need to observe the hearings and do preparation and so on before presenting. But I think that if that is the question, and that's what has to be, then absolutely.

THE CHAIRMAN: Have I missed anything?

MR. SHAW: Just so I'm clear on this, did I understand you to say that the November 25th date was misdiarized in your office?

MS. WHELAN ENNS: Right through the system, yes. And I take responsibility, ultimately it is on me in terms of not catching what the original intention was. Originally the witnesses for Manitoba Wildlands were all in a two-day block. And we basically diarized November 25th as it applies to the two witnesses next Monday, and it stayed in the system for all of them. And as I said, yes, we could have filed reports last Thursday.

THE CHAIRMAN: Thank you, Ms. Whelan Enns. The panel will further deliberate and we will report when we have come to a conclusion.

Thank you.

MS. WHELAN ENNS: Thank you.

THE CHAIRMAN: I would now like to turn it over to the new panel.

Now, is there anyone on this panel that hasn't been sworn in? I don't think so.

MS. PACHAL: I think Jane and I haven't.

THE CHAIRMAN: You have been up here before and we didn't swear you in? That is when I was being negligent and forgot about.

Shawna Pachal: Sworn

Jane Kidd Hantscher: Sworn.

THE CHAIRMAN: Since it has been a while you might introduce everybody at both tables, please?

MS. NORTHOVER: All of the people at this table, you have seen before, so our introduction is going to be quite short. I'm Carolyne Northover, and I'm senior environmental specialist at Manitoba Hydro. This is Victor Spence, he is representing the Cree Nation Partners. Martina Saunders, who is here in place of Ted Bland, who is snowed in up north, from York Factory. And then we have George Neepin and Karen

Anderson from Fox Lake. And beside me, Vicky Cole, manager major projects licensing and assessment for Manitoba Hydro. Jane Kidd Hantscher, our implementation supervisor at Manitoba Hydro. And Shawna Pachal, who is the division manager of major projects.

THE CHAIRMAN: Could you introduce the back table as well, please?

MS. NORTHOVER: Sarah Wakelin is an environmental specialist at Manitoba Hydro in environmental licensing and protection. And Bill Kennedy, who is an advisor for the Cree Nation Partners. Matt Hunt, also an advisor for the Cree National Partners, Jim Thomas who represents York Factory, and Leslie Agger for Fox Lake.

THE CHAIRMAN: Thank you very much.

And I understand you are going to be coming up shortly, Mr. Spence -- Mr. Flett, pardon me. I'm getting old, my memory slips after a couple of weeks. So you can introduce yourself at that time when you come.

Okay. Ms. Northover, are you leading it, or Ms. Pachal?

MS. PACHAL: Ms. Northover is leading the panel, I'm just making some introductory

remarks.

So we have arrived at the Partnership's final panel. It is nice to finally, in our panel and presentation guide, to see the last box checked off. I think everybody is probably relieved to see that we have got to number 6. And it is appropriately called Moving Forward on Environmental Matters. And it is appropriately named moving forward, because as you've heard many times over the last number of weeks, Hydro and its Partners have had a long, challenging and oftentimes difficult history. But you've also learned and heard a lot about the fact that the Partnership is changing. And I think anybody who has participated in this process or read the EIS, that should be pretty obvious to you by now.

All of us are participating in history as part of this hearing. For the first time in Canada, based on our research, we find that an EIS has been submitted in partnership with First Nations who have submitted jointly with the developer an EIS with their evaluation of Aboriginal traditional knowledge from the Cree worldview perspective, provided for equal weight

with the western science perspective.

This hearing is a snapshot in time in terms of this Partnership's journey. And should this project proceed, Manitoba Hydro and Tataskweyak and War Lake and Fox Lake and York Factory will be working together to implement the Joint Keeyask Development Agreement and the adverse effects agreements for many, many years to come. And as we have heard many times, for the life of the project, which is up to 100 years.

And so there is a lot more work to do, both through the construction phase and the operation phase. And you've had an opportunity through previous panels to meet many of the people who will be responsible for ensuring that the commitments that we have made in the EIS and the JKDA and the adverse effects agreements will be honoured and implemented in good faith.

So this panel is here and we are going to explain to you how the environmental commitments come together in the environmental protection program and the structure that the Partnership has put in place to oversee this implementation.

MS. NORTHOVER: Thanks, Shawna.

Good morning Mr. Chairman, Commissioners, participants, ladies and gentlemen. As Shawna mentioned, this presentation is about moving forward as partners on environmental matters, as we head into construction and then operation of the Keeyask Generating Station, if it is licensed. And we are very happy to finally get our chance to present this information to you.

So I have gone through our panel member list already. So I will just tell you who is presenting today. Ms. Martina Saunders is going to take Ted Bland's place and present on York Factory's behalf. Mr. George Neepin and Mr. Victor Spence will present, and myself. Martina will speak about the importance of ongoing collaboration of the Partnership to her community. And then I will present what the Partnership has planned and committed to. And then George and Victor will speak at the end to complete the Partnership's presentations at these hearings.

Martina, please go ahead?

MS. SAUNDERS: Thank you, Carolyne. Good afternoon, Commissioners. I will let you know that due to poor weather, yesterday's scheduled flight to York Landing was cancelled.

As a result, my colleague, Ted Bland, is unable to be with us today. I will be making the presentation on behalf of York Factory First Nation. I appreciate this opportunity to speak to you about a topic that is very important to us.

If the Keeyask project receives approval and goes ahead, the Keeyask Hydropower Limited Partnership, as owner of the project, will have important responsibilities for environmental monitoring, management and protection. As Carolyne will explain in her presentation, the Partnership has delegated authority to Manitoba Hydro to manage construction and operation of Keeyask, including implementation of the Keeyask environmental protection program.

This does not mean, however, that York Factory First Nation and the other Cree partners will be passive observers as the project moves forward. The opposite is true. We will be active partners in the governance of Keeyask with membership on the board of directors and various Partnership committees, as we explained in Kipekiskwaywinan, our Keeyask report, York Factory chose to become a partner in Keeyask so we could have this role in determining how the project is

developed and managed.

With ownership comes new responsibilities. We accept and welcome those responsibilities. We will continue to bring our Cree values, customs and knowledge to the implementation and operation of the project. We will also work to ensure that Keeyask is developed, managed and operated according to best practices of environmental protection and stewardship.

As partners in the Keeyask generation project, York Factory, Manitoba Hydro, Cree Nation Partners representing Tataskweyak and War Lake First Nations, and Fox Lake Cree Nation, share ultimate responsibility for environmental monitoring, follow up and management.

York Factory has stated that the Keeyask Partners must be held accountable to generations to come and strive for the highest standards of environmental stewardship, not simply the minimum regulatory requirements. The Keeyask Partners are committed to ensuring that the environmental protection program for Keeyask will be comprehensive, substantial, and respectful to the importance of both Aboriginal traditional

knowledge and western science.

We have agreed to work together as partners, gathering, sharing, utilizing and applying traditional knowledge and western science in the ongoing planning, development, operation and stewardship of Keeyask.

When York Factory First Nation talks about stewardship, we mean to watch out for and take care of the lands, waters, wildlife, plants, and people of the land. York Factory's responsibilities and authority for monitoring and stewardship do not come just from the Keeyask project and the Joint Keeyask Development Agreement. York Factory members have been taught we must care for Aski, including our ancestral lands and traditional territories, sustaining the people, land, waters, animals, fish, plants, language, culture and knowledge. This is not just a responsibility, caring for Aski is fundamental to being Innu, it is essential to mimo-pimatisiwin.

As we have explained in Kipekiskwaywinan and in earlier presentations at this hearing, traditional knowledge is fundamental to who we are as a people. Our traditional

knowledge is maintained by our elders and passes from generation to generation. It is an ongoing process of learning and applying knowledge and teachings. York Factory's traditional knowledge is therefore a fundamental part of the ongoing process of sharing and participating in the Partnership. It is not just information to be recorded and included in the Environmental Impact Statement or science based management programs. Because traditional knowledge lives within our people and our way of life -- and our way of life, engaging elders, men, women and youth and resource users is the most important way our traditional knowledge, values, customs and worldview are brought into environmental assessment and management. For this reason it is crucial that our community representatives, elders, youth, resource users and knowledge holders continue to participate in the next phases of Keeyask, including construction, operation, environmental monitoring, and adaptive management.

As explained in chapter 8 of the response to EIS guidelines, the Partnership is committed to environmental stewardship, and the Partners have agreed that the long-term success of

the environmental protection program requires equal consideration of both traditional knowledge and technical science.

The Keeyask Partners recognize that each of the Cree Partners has a role and responsibility in relation to the environmental protection program for Keeyask. We will collaborate with one another and Manitoba Hydro in overseeing the environmental protection program. Each Cree partner will also develop and implement a community specific monitoring program. The programs will have support and funding from the Keeyask partnership for the life of the Keeyask project.

York Factory is developing a plan for our environmental stewardship program. Our involvement in monitoring and stewardship activities will be based on and will apply both traditional knowledge and western science. We will hire staff to coordinate community specific stewardship activities and to coordinate our participation in the Keeyask environmental protection program. A steering group made up of elders, resource users, and other community members will provide support and advice. The

knowledge, experiences and observations of community members will be shared through participation in field trips, workshops, interviews and other activities. Community members will be kept informed on a regular basis through meetings, reports and newsletters. We will monitor the effects of Keeyask on our community and the lives of our members. Our community members will also continue to work on field programs with the scientific monitoring teams.

As we have explained many times, providing opportunities for our youth and generations to come is one of the main reasons we chose to be a partner in Keeyask. We are dedicated to building capacity in environmental stewardship through training and work experiences for our youth. York Factory envisions a future where our members are managing and operating Keeyask and other projects in our ancestral lands, not only applying the knowledge and values of our elders, but also the skills and knowledge of western science.

As a partnership we have committed to support effective mechanisms and processes to

promote meaningful sharing and collaboration involving all partners. We recognize the importance of bringing together Manitoba Hydro, Keeyask environmental managers, the Cree Partners, elders, and other knowledge holders from our communities in undertaking environmental stewardship activities.

You have heard during presentations by previous panels about the Partnership's plans for environmental management, protection and monitoring. In her presentation, Carolyne will provide some more detail about the environmental protection program and its implementation structure.

The monitoring advisory committee is an important part of that structure. The MAC will provide advice and recommendations to Manitoba Hydro and the Partnership's board of directors on the conduct and outcomes of the environmental protection program. The committee will have representatives from all the partners and will provide a forum for ensuring collaboration on environmental monitoring, protection and management. The MAC will review and discuss outcomes of the various components of the program

from traditional knowledge and western science perspectives.

The Keeyask Partners will continue learning to work together and share knowledge with one another about Aski and Keeyask over the long term.

We must continuously reconcile our participation in this partnership with our relationships and obligations to the natural and spiritual world and to generations to come. If we do not, our elders and their teachings tell us we will not survive as a people. This is central, this is the central core message and impact for us as a people in this project. We want our partners to respect and work with us to continuously reconcile our role as partners, as well as heal and build trustworthy relationships through processes, programs, and decision making throughout the life of the Keeyask project and partnership.

We have entered into this partnership insisting on a long-term ongoing commitment to healing, reconciliation, mutual respect and self-determination. We seek to sustain our Cree values, customs and traditions in the process.

We are cautious about what lies ahead, but as we have done so many times since first contact with European colonizers, we will continue to adapt and keep our place as Cree people. So we approach this partnership with hope and determination to keep our values and customs, control our destiny, and provide opportunities for our young people. It is the generations to come who will inherit the outcomes of the Keeyask project and partnership.

Our involvement in Keeyask does not end with this hearing or with the issuing of licences for the project, should those licences be issued. We will be part of Keeyask for the life of the project and beyond. We will manage Keeyask for generations and care for Aski forever. This process is just beginning. Egosi.

MS. NORTHOVER: Thank you, Martina.

So now my presentation. In my presentation I'm going to be covering the following topics, Keeyask environmental protection program and a brief description of all of its components, adaptive management and how it is integrated into the program, the monitoring advisory committee, and how outcomes of the

program will be communicated.

Moving forward as partners, it has been described by previous presenters, the discussion about the Keeyask project started many years ago between the First Nations that are now partners on the Keeyask project and Manitoba Hydro. These discussions lead to agreements and collaboration on the planning of Keeyask. You have heard about the Joint Keeyask Development Agreement, JKDA, signed by the partners, the use of ATK and technical science to assess the project, and the mitigation that is going to be employed.

The result of this collaborative process is a project that's viable, provides maximum socio-economic benefits to the region, and minimizes adverse environmental effects.

Moving forward, if Keeyask receives a licence, collaboration on environmental components of the project will continue long term. We believe that the planned collaboration into the future will strengthen the Partnership.

This diagram is a top portion of the diagram that you have been provided as a separate handout, which shows the entire environmental

protection program. It demonstrates graphically the structure that the Partnership will have in place to implement and manage the environmental protection program.

The Keeyask Hydropower Limited Partnership has delegated authority to Manitoba Hydro to manage construction and operation of the project, including implementation of the environmental protection program. Although Manitoba Hydro is responsible for construction and operation of the Keeyask generation project, the KHLP has put mechanisms in place to ensure that all partners are involved in implementing the program and reviewing program's outcomes.

The Keeyask environmental protection program implementation structure includes a monitoring advisory committee, we call it MAC, which is one of these mechanisms. It includes participants from each of the Partner First Nations and Manitoba Hydro. It is an integral aspect of the Partnership's governance structure. Manitoba Hydro will be guided on the implementation of the program by the MAC and the Partnership's board of directors.

The Keeyask environmental protection

program is being developed to mitigate, manage and monitor environmental effects during the construction and operation phases of the project. You have heard about all of the components of the program throughout the presentations that preceded me. This diagram shows how all of the components that have been previously described come together, and the three types of plans that make up the environmental protection program. It lists all of the plans included in the program, the two environmental protection plans, the variety of management plans, and the monitoring plans, both technical science and the Partner communities' ATK plans.

The purpose of this presentation is to describe how it will all come together to be implemented, as well as how information resulting from the program will be applied and disseminated.

As indicated by the list of plans in the diagram on the previous slide, a comprehensive environmental protection program is being developed. Mitigation measures specific to a variety of environmental issues have been committed to in the EIS. And many of the mitigation measures have been described in

previous presentations made by the Partnership at these hearings. These commitments to mitigation are the foundation of the environmental protection program, and has been incorporated into the environmental protection plans and management plans.

I just want to note that some of the socio-economic mitigation measures that were described in the socio-economic resource use panel are not included in the program's management plans as they each have separate avenues for implementation which have been described. For example, the worker direction committee, the advisory group on employment and cultural ceremonies.

You have heard about the monitoring that will take place to determine if the mitigation is effective. Monitoring of all of the mitigation, including the socio-economic mitigation measures is part of the program.

The plans that have been submitted to date are preliminary. In some cases, discussions with regulators are continuing on the plans and modifications will be required based on these discussions. If the project is approved, the

clauses in the Manitoba Environment Act licence and the Fisheries Act authorization will need to be incorporated into the plans as appropriate. They will not be finalized until that occurs.

Filing the plans in advance of licensing has provided the opportunity for the Partnership to receive feedback from regulators, and through the Keeyask website, the public as well. The final versions of the plan and any subsequent revisions will also be posted on the website.

I would like to provide a little more detail on the program to refresh your memory on what you have already heard. First, the environmental protection plans. These were described in panel three on the project description and construction. Two plans have been drafted and were submitted in April of this year, one for the construction of the generating station and one for the construction of the south access road.

Environmental protection plans have measures to be implemented by contractors and staff to minimize effects of construction. They are organized by construction activity, each

include -- examples include tree clearing, drilling and material placement and water. Mitigation measures specific to these activities are listed in the plans. They are designed to be a reference manual, primarily for the contractors. The plans govern contractors to use best management practices for environmental protection. Applying the mitigation measures is intended to meet and in many cases exceed regulatory requirements. It is a contractual obligation of the contractors to fulfill these plans. There will be environmental staff on site reporting to the resident manager to monitor compliance with the environmental protection plans. There will also be environmental staff in Winnipeg whose job is to provide technical support to the site environmental staff.

Environmental management plans: These include commitments made by the Partnership for ongoing mitigation focused on specific issues, such as sediment, fish habit, site access, heritage resources, terrestrial habitat, and woody debris.

I'm going to give a brief overview of all of the plans that you have previously heard

about.

The sediment management plan prescribes procedures to manage sediment levels in the Nelson River due to in-stream construction in real time. It includes the actions that could be taken if the project's total suspended solids exceed target levels. It was submitted in April of 2013 and is described by the physical environment panel. As the name indicates, it is for the in-stream construction period only.

The fish habitat compensation plan is required by Fisheries and Oceans Canada. It identifies work to be installed or other activities to compensate for fish habitat loss. The plan particularly focused on sturgeon spawning habitat and sturgeon stocking. It was submitted on August 14th of this year, and it was described by panel 4C, the aquatic portion of the panel. Most of the works will be installed during construction, but review of their efficacy and possible modifications will extend into operation. The stocking program will be in place for at least 25 years.

The construction access management plan prescribes measures to which are safe,

coordinated access to the site for authorized users during construction, and is designed for public safety and to protect the area's natural resources. It was submitted in April of this year and it was described by the socio-economic panel, 4D.

The heritage resources protection plan prescribes procedures for heritage resources or human remains discovered during project construction. It was submitted in April and described by the socio-economic panel.

The vegetation rehabilitation plan will outline what needs to be done in project areas not needed for operation in order to rehabilitate them. The planting prescribed in the plan will give preferences to rehabilitating the most affected priority habitat types. It will be developed during construction when the extent of clearing is known and when areas are no longer required for construction purposes. Discussed by the terrestrial panel, most of the planting will be completed during construction. Monitoring and modifications of the planting prescriptions, if required, will continue into operations.

The terrestrial mitigation

implementation plan, as the name suggests, outlines the implementation strategy for the terrestrial mitigation measures described in the EIS, including such things as wetland replacement and bird nesting structures. It is currently under development, but all concepts that will be included in the plan were described in the EIS. Similar to the rehabilitation plan, work will mainly be undertaken during the construction, and adjustments made if required based on monitoring and operation.

The water waste management program is designed to contribute to the safe use and enjoyment of the waterway from Split Lake to Stephens Lake. A multi-purpose boat patrol will monitor shoreline and waterway activities and manage debris during both pre and post impoundment, and will be in place for the long term. Discussed by panel 3 and 4B, the project description panel and the physical environment panel.

The reservoir clearing plan describes the flooded areas in the reservoir that must be cleared of trees prior to impoundment and the methods to do this. It was described by panels 3

and 4B, the project description and the physical environment panel, and it was submitted in April of this year. It is also part of the JKDA, as is the water waste management program.

Now, the environmental monitoring plans, there are five technical science monitoring plans, physical environment, aquatic effects, terrestrial effects, socio-economic and resource use. There will be ATK community based monitoring plans as well.

You have seen this diagram already. Previously it was about the assessment process. This same two-track evaluation of the project will continue during construction and operation of the station. The Partnership recognizes the value of having issues looked at from two different perspectives. Technical science and ATK will be used and considered equally to monitor the actual effects on the aquatic, terrestrial, physical and socio-economic environments.

Monitoring will be fundamental to the environmental protection program's success. Monitoring is being conducted to test predictions and evaluate effectiveness of mitigation in reducing adverse environmental and social effects.

There is some uncertainty with predictions. Monitoring addresses areas where uncertainty exists, including those areas where there are differences between the predictions based on technical science and Aboriginal traditional knowledge.

Five technical science plans have been drafted. They follow up on the valued environmental components and the supporting topics described in the EIS. They were described in detail by the assessment panels. The physical environment monitoring plan, terrestrial effects monitoring plan, socio-economic monitoring plan, and resource use monitoring plan were submitted in June of this year. And the aquatic effects plan was submitted in August. When these plans are implemented, community members will be involved in the field programs, working side-by-side with the technical specialists as they were during the assessment phase. They will start early in construction and extend into operation for many years.

Now I will discuss the Aboriginal traditional knowledge monitoring programs. The Partner First Nations are currently developing

community specific ATK monitoring programs. By doing so, social and environmental issues that are important to the community can be monitored by community members. These ATK monitoring programs will be based on Cree perspectives and understandings about the potential effects of the project.

ATK monitoring will involve the development and implementation of annual monitoring programs based on construction and/or operational activities and related community concerns about potential effect. Activities may take place at key milestones during the project's construction and operation phases. The results of the ATK monitoring will be an integral part of assessing the accuracy of predictions and the effectiveness of mitigation measures. Each of the Partner First Nations will be responsible for collecting and interpreting ATK to assess the project for the purposes of reporting on the actual effects to regulators and to also evaluate the impact of the project on its members, from a Cree worldview perspective. ATK monitoring is planned for the life of the project.

You have seen this map in past

presentations. It shows the resource management areas and traditional use areas of the Partner First Nations. Our partners have known and used the land in the area of the project for centuries. Ted -- Martina mentioned the need to engage the knowledge holders in the communities to help oversee the area. The Partnership recognizes that it will be beneficial for the KCN knowledge holders and elders to collaborate with one another and share information. So a commitment has been made to provide resources for a collaborative forum as well as the individual ATK programs.

Now I will talk about the information generated for the environmental protection program, how it will be used, overseen and communicated.

The mitigation measures were described in the EIS, and over the last couple of weeks at these hearings have been carefully planned and designed to prevent or reduce, to the extent practical, adverse effects from the project. These measures are based on extensive study of the project best practices, research, literature review, and numerous discussions between the Partners.

There are still some uncertainties with predicted effects and the effectiveness of planned mitigation measures. Adaptive management is a planned process for responding to uncertainty, or to an unanticipated or underestimated project effect. There are numerous diagrams that describe the adaptive management process. This one is a simple conceptualisation that reflects the Partnership's framework for adaptive management. Plan based on predictions. Do implement the plans. And monitor what is implemented. Evaluate the monitoring information and learn from it, and then make adjustments as necessary. The cycle continues, implementing any adjustment, monitoring it, learn from it, and so on.

This framework is consistent with the expectations of the Canadian Environmental Assessment Agency, which through the EIS guidelines requires it to describe mitigation, evaluate its effectiveness, and determine the need for management response.

Adaptive management: With the Keeyask project, adaptive management will be applied when monitoring demonstrates there is a variation

between actual project effects and predicted effects. A decision needs to be made on what can be done. We have come up with possible decisions. First, the application of pre-determined adaptive measures. Some examples of this are, if terrestrial rehabilitation is not succeeding, other planning prescriptions can be applied. Suspended sediment triggers are reached, and construction can be altered. Lake sturgeon spawning structures can be redesigned if they are not working satisfactorily. Bird nesting platforms can also be redesigned or modified.

Second, new measures can be designed based on monitoring results. Examples include the need for fish passage may be determined, and undertaking some action to address an employment issue. In some cases a communication plan will be implemented where no adaptive measures can be applied, for example, methylmercury in fish.

The time it takes to make an adaptation varies greatly among the numerous mitigation measures that will be implemented. In some cases a quick response or adaptation is required and possible. The sediment management plan relays information in real time so the

construction team can adjust in-stream work if triggers are reached. The environmental protection plans list numerous construction specific mitigation measures, and the environmental site staff monitor compliance with and effectiveness of those measures. If something is not working as intended, they will discuss with the contractor what else is needed to rectify the problem.

Manitoba Hydro will implement these quick adjustments and provide the information to the monitoring advisory committee.

Other mitigation measures will take time to monitor, and these situations will be overseen by the MAC.

So, you have heard the term monitoring advisory committee or MAC many times since the start of these hearings. I'm going to explain to you now a bit about what it is.

The MAC is an advisory committee to the KHLP board of directors. The terms of reference for the MAC are part of the Joint Keeyask Development Agreement. As I mentioned near the beginning of my presentation, the MAC will have representatives from each of the four

Partner First Nations and from Manitoba Hydro. The committee will have five Manitoba Hydro reps and five First Nation reps, two from TCN, one from War Lake, one from York Factory and one from Fox Lake. Plus the First Nation Partners will be provided funding for technical advisors. CNP will have two, Fox Lake and York will be allowed one each.

The MAC will meet every two months during construction and will be in place for the life of the project. The purpose of the committee is to provide oversight of the environmental protection program by reviewing program activities and outcomes. Presentations will be made at the meeting, and discussions on the material presented will occur. MAC will provide an opportunity to review and discuss outcomes from both a technical science and an ATK perspective.

Sufficient funding has been allocated to MAC to make it functional and meaningful for the long term. The technical advisors will be funded to not just participate in meetings, but to review bimonthly meeting materials, provide advice to their client, and provide input into the annual monitoring summary document.

Currently, the Partners' regulatory and licensing committee has been used as an interim forum for the MAC issues, and already it has been determined that a sub committee for caribou is required due to the importance of the species to the communities, and due to its migratory behaviour over a large area. The committee will serve as an effective venue for coordinating the project's caribou monitoring and management activities with other organizations in the lower Nelson region.

This demonstrates that funding is available to address issues of concern and the MAC itself is flexible and adaptive. As an advisory body to the board, concerns or recommendations about the environmental protection program can be raised to the board for consideration. The board will draw on the advice or consider the concern and decide how to proceed.

If you refer back to the separate handout, you will be reminded that Manitoba Hydro is serving as the project manager, and Manitoba Hydro takes its direction from the Partnership board. MAC will hear back directly from the board on their decision, and if accepted, MAC will also,

of course, be involved in overseeing how the decision was implemented.

It is anticipated that MAC will improve an understanding of respect among the Partners, foster an environment of sharing and collaboration in undertaking environmental stewardship activities, and will lead to the implementation of a more robust environmental protection program.

I mentioned that in some cases determining if mitigation measures are working will take time. In some cases years of monitoring will be required.

The vegetation rehabilitation plan could have high mortality for trees and plants after one season, and need review. It is also possible that the mortality occurs over several years of growth and the need for modification to planting prescriptions may be required down the road.

Determining how sturgeon are using the constructed habitat structures will take at least three years. MAC will oversee the monitoring, and if a determination that adaptive management is required, MAC will provide the forum to discuss

practical modifications to mitigation using ATK and technical science. The committee will review recommendations from technical experts, and possibly regulatory agencies, on the most appropriate course of action.

MAC has a communication mandate as well. The committee is responsible for communicating the outcomes on an annual basis to members of the Partner communities for the purpose of keeping community members updated on project activities, adverse effects, and proposed mitigation strategies.

Communication to Partner communities could occur through various forums. Open houses is an example, but each community will determine what is an appropriate approach for communicating with their members.

A summary report of all environmental protection program activities and results will be prepared annually by the MAC on behalf of KHLP, for the Partner communities and to the general public. This report will be translated into Cree as well. The report will be sent to interested parties, including the participants at these hearings.

Manitoba Hydro, on behalf of the Partnership, will submit reports to regulators, including compliance monitoring reports in connection with the environmental protection plans, technical reports of the activities as a result of the monitoring, including the outcomes of both ATK and western science.

The report to Manitoba Conservation and Water Stewardship, Fisheries and Oceans Canada, and possibly other regulators, will be in accordance with the schedules outlined in the licences and authorizations, if the project is approved.

All reports, including the summary report, will be publicly available on the Keeyask website. The current website will be maintained for construction and operations. The website will be updated frequently, as information is available. It provides opportunity for comment or questions about the project and associated posted materials. All comments received will be reviewed and considered and questions answered.

So in summary, the Partners have worked collaboratively for many years to assess the project and to develop mitigation measures to

minimize the adverse effects. Participation and collaboration of all of the partners will continue throughout the life of the project to implement a comprehensive environmental protection program. Both ATK and technical science will be used to assess and mitigate effects, and through MAC the Partners will oversee the program and work together to protect the environment, or as the Cree call it, Aski.

So now I'm going to ask Mr. George Neepin to present.

MR. LONDON: Sorry, Mr. Chair, just before we move to Councillor Neepin, as we were preparing for the panel, it became clear that we ought to file with the Commission the letter of agreement between Manitoba Hydro, the Partnership, and the Cree Nations, where the commitments to monitoring, in particular Aboriginal traditional knowledge monitoring are set out, in addition to what is in the EIS. You have it in front of you now. It is a letter dated October 17, 2013, from Manitoba Hydro to the four limited Partners, the four Cree Nations. And it is signed by Ms. Pachal, who is sitting on the panel this morning. And I ask that it be filed as evidence in the

case. And if you wish, sir, I would be happy to read it into the record, if you would like. It is an important document.

THE CHAIRMAN: Do you want to do that now or after the Cree Nation participants?

MR. LONDON: If I'm going to do it, I would rather do it now, because in some ways it is explanatory of the Cree Nation evidence.

THE CHAIRMAN: Go ahead, sir.

MR. LONDON: The letter is addressed to the four Cree Nations and it references the Keeyask Cree Nation involvement in the environmental protection program and the Keeyask project.

"The Keeyask Hydropower Limited Partnership, (KHLP), and Manitoba Hydro as the general partner are committed to ensuring that the environmental protection program for the Keeyask Generating Station is comprehensive, substantial, and respectful of the importance of both Aboriginal traditional knowledge and western science. In order to do so, the KHLP recognizes the need to work

together as partners, gathering, sharing, utilizing and applying ATK and western science in the ongoing planning, development, operation, and stewardship of Keeyask. There is a reciprocal commitment among the Partners to work collaboratively with the necessary support and financial resources to ensure that project effects, anticipated and unanticipated, are understood, mitigated and managed. Without derogating or abrogating any existing rights or agreements, it is recognized that each of the Keeyask Cree Nations has a role or responsibility in relation to the environmental protection program for the Keeyask project. Each of the KCNs will develop and implement community specific monitoring programs. It is understood that in giving their support to the Keeyask project and the EIS, the Keeyask Cree Nations are relying upon these programs having

meaningful support and reasonable funding from the Keeyask Partnership. This letter will confirm our agreement on behalf of the KHLP and on behalf of Manitoba Hydro to the following:

1. We shall provide reasonable funding during the life of the Keeyask project to each KCN for the development and implementation of a community specific monitoring program consistent with the statements contained in the response to EIS guidelines and relevant to the current phase of the project.

2. We shall respond meaningfully to information and recommendations arising from the ATK monitoring program reports and ensure that the information and recommendations are given equal weight to western science in decisions made regarding the KHLP's environmental protection program consistent with the provisions of chapter 8 of the Response to EIS guidelines and any conditions or relevant licences and authorizations.

3. It is acknowledged that it will be beneficial to all parties if the KCNs and their respective Elders and other KCN knowledge holders, are able to collaborate with one another, sharing the methods, observations, and findings of their respective monitoring programs, and making joint reports and recommendations based upon the information derived therefrom. We agree that in addition to participating with and providing reasonable funding to each KCN with respect to the respective monitoring programs, we will participate in and reasonably fund each KCN's participation in a process to develop a mechanism satisfactory to all KCNs by which they can collaborate on monitoring and resolve conflicts and disputes that may arise with respect to such programs, and also to fund the process' continued operation.

4. The KHLP also commits to support effective mechanisms and processes to

foster an environment of meaningful sharing and collaboration involving all Partners, including Manitoba Hydro, Keeyask environmental managers, and the KCN, and their respective elders and KCN knowledge holders, in undertaking environmental stewardship activities.

Yours truly, Shawna Pachal."

THE CHAIRMAN: Carry on.

MR. NEEPIN: Okay. Thank you. Tansi, and good afternoon, Mr. Chairman and members of the Commission.

Throughout the evidence offered to date by the Partnership, there has been much reference to the monitoring programs required to properly test the assumptions and predictions made by the Partnership, and the methodologies, notably adaptive management, which will be employed if and when the predictions fail to hit the mark. You have also heard much testimony about the two-track environmental evaluation system that has been used in the preparation of the Environmental Impact Statement and which will continue to be used in the monitoring programs.

The exact details of the Keeyask monitoring programs and methodologies, particularly with regard to community specific Aboriginal traditional knowledge monitoring, have not been fleshed out. However, the commitment of Manitoba Hydro and the Partnership to monitoring programs, including community specific Aboriginal traditional knowledge programs, is clear, and the fine print is in the process of being and will be worked out.

In our view, Aboriginal traditional knowledge must be a primary effective watchdog of the effects of the project and must be fundamental -- must be a fundamental basis for adaptive management of the environment and unforeseen adverse effects.

We believe best practices monitoring anchored in Aboriginal traditional knowledge is the most important requirement of the project. It will be crucial to everyone in the environment, including, but not restricted to the Cree.

We look forward to the negotiation and completion of promised agreements with Manitoba Hydro about community specific monitoring plans with each of the limited partners. Those

agreements will provide the necessary funding for and breadth of participation by the Cree, in a meaningful way, with regulatory science and in accord with the Cree worldview and understanding of Aski. Our participation will be essential in ensuring the Partnership and Manitoba Hydro do what is needed and best for the environment.

Who better to be involved in that process than the people who know the environment best, the people who live there every day and have lived there for a millennium? Supported by the Partnership and Manitoba Hydro, we will bring to the process on the ground real time observations, reports, recommendations, and solutions.

It is also clear that the location and effects of the Keeyask project cross notional boundaries of the Partnership's respective resource management areas and traditional territories. So collaboration amongst our respective nations is absolutely necessary in order for the monitoring to be effective and efficient.

In that regard, the Environmental Impact Statement, extensively reviewed and signed off on by the four Keeyask Cree Nation Partners,

contains a number of important baselines to facilitate our respective involvements in our collaborative process. For example, we have agreed that the Aboriginal and Treaty rights of each of the Cree partners in our existing agreements, objectively interpreted, will be honoured. All such rights are important, and no one set of rights trumps another. Where they overlap, as they sometimes do, the starting point for collaboration and compromise by the four Cree Nations has been articulated in the Environmental Impact Statement, which as I have said, has been signed off on by all of the Partners according to the environmental protocol.

It speaks, for example, to the mutual assurances of the Keeyask Cree Nations to allow permission for access by elders, resource users, and others to observe and monitor conditions on lands and waters at the site of the project. And in its reaches, since the project affects all of the limited Partners, the Partners showing respect for each other's rights will be required to accommodate each other and to collaborate on the mechanics of how that is to be done. That is the responsibility which comes both from ownership of

the dam, the honouring of our rights, and the stewardship of the environment.

I want to spend just one moment looking at the future a little more broadly than just about monitoring. The Joint Keeyask Development Agreement articulates the way in which the project will be managed and governed. It establishes the respective rights and obligations of the parties, that is both the limited partners and Manitoba Hydro as the general partner. Manitoba Hydro clearly has the dominant role, both because of its majority membership on the board of directors of the general partner, and by virtue of the contractual relationships for management by it of all of the phases of the development through agreements of the Partnership delegating those responsibilities to Manitoba Hydro as the manager.

The respective sharing of the benefits of the project amongst the partners is clearly and precisely articulated in everything from the terms of the sharing of profits to the targeted employment standards and business opportunities.

There are oversight committees of the five partners, and several provisions to ensure the monitoring of which I have just spoken.

The agreement also specifies, amongst other things, those areas, for example, the fundamental features in which the consent of Manitoba Hydro and the Cree Nations are required in order for any change to take place from the specified promises. And of course, the relative participation and government rights of the Cree Nations amongst themselves are fully articulated.

Experience as a partner in Keeyask has given us a better understanding of how to participate meaningfully in things that affect Aski. While delivering to us significant benefits, it also has greatly increased our capacity to do other major business on behalf of our people.

So here is my point. We have said that our Cree worldview does not differentiate among animals, things, elements and human beings. To use another term, it is holistic. It also values balance or mino-pimatisiwin.

Our participation in Keeyask does not only recognize our stewardship of the environment and provide material benefits for our young, it provides experiential benefits for our people on how we must proceed in future to heal and grow.

There may be adverse effects for our people, but the benefits, even beyond the adverse effects agreements, are large and provide a balance for us in Aski.

Keeyask represents an invaluable enrichment of our human capacity. That is an important benefit, maybe the most important benefit to the environment that this commission about the environment must not overlook.

At the outset of this hearing, I said that we had great difficulty coming to our decision to participate as a partner in and a supporter of the project. I can assure everyone that our initial caution will be maintained throughout the life of the project. As good partners will be around forever to make sure that the Partnership as such, and Manitoba Hydro itself, play by the rules.

Our commitment is to protect Aski and ensure that all involved fulfill their obligations to our people and to the people of Manitoba. We look forward to this Commission's positive recommendation to the Minister. We have waited a long time for this kind of opportunity. We hope it arrives without any further delay. The future

of our young people is at stake.

MS. NORTHOVER: Thank you, George. And now to finish our presentation, Victor Spence will present, but on his behalf Robert Flett will read Victor's piece.

MR. FLETT: Tansi. My name is Robert Flett and I'm from Tataskweyak Cree Nation, part of the Cree Nation Partners.

The Cree Nation Partners welcome this opportunity again to address the Commission, the participants, and the public to discuss how our historic partnership will work together as we move forward with the Keeyask project.

You have already heard about our involvement in the Keeyask project as the Cree Nation Partners, as well as our earlier history, to provide context for our partnership with Hydro. This history included the recognition of our right to be involved in future development in our homeland, as set out in the 1977 Northern Flood Agreement. The history also included the signing of the 1992 NFA implementation agreement, which strengthened and recognized our rights, including the establishment of the Split Lake resource management board and the Split Lake resource

management area, that involved co-management of the lands and resources by Manitoba, Tataskweyak and War Lake.

History also included the initiation of discussions in 1996 by us, Tataskweyak, to explore an unprecedented at the time business relationship with Hydro related to Keeyask. History also involved the process of consulting our members for 15 years, from 1998 up until today, including the committee's numerous meetings and variety of media that we used to ensure that our members had the opportunity to make an informed decision on partnering up with this project.

History also involved our evaluation of the environmental effects of the Keeyask project, on our relationships with the land and the waterways, including identifying potential effects on our ability to maintain our Cree customs, practices and traditions.

History also involved our decision to approve TCN chief and councils, as well as War Lake, in signing the JKDA and our adverse effects agreements in 2009.

As you have heard in these hearings,

our people have a responsibility to care for the land and the waters, that are founded in our strong relationships with Aski, and this responsibility is one that we don't take lightly. By working together with Hydro and our Partner Cree Nations, we have put in place measures to address, offset, mitigate and compensate for the anticipated environmental effects of Keeyask. We will utilize our monitoring programs that we are talking about today, and adaptive management strategies to ensure that we are addressing each potential issue appropriately.

The environmental protection program will continue to depend on equal consideration of Aboriginal traditional knowledge and technical science to measure the actual effects of the environment and whether mitigation is working as anticipated.

Our monitoring program will ensure that the effects of the project on our relationships with Aski are fully considered and addressed. Our programs will have an annual work plan and will be adaptable to unforeseen circumstances.

As described in the environmental

protection program, the following types of activities are anticipated as part of this program. Religious and spiritual ceremonies at key project milestones, such as the silencing of the rapids, that's going to be a big one for our people. Site visits by elders, resource users and other members to observe, keep an eye on, and communicate conditions of the lands and waters during, before -- I should say before, during, and after construction.

The program will also have community based activities to monitor socio-economic project effects. Also ongoing communication between the partners to ensure that all effects are documented and addressed, and careful monitoring of the Split Lake resource management area, including keeping an eye on the birds, plants, animals and the fish that we so greatly depend on.

Further with the Keeyask project proposed to be located entirely within our resource area, the Split Lake resource area, the Cree Nation Partners anticipate significant involvement in the technical science monitoring programs, something that we are going to be insisting on. These programs will provide

valuable employment opportunities for us, but more importantly will help build our skills and knowledge so that our communities will have the capacity to manage both the technical science and ATK monitoring programs.

Members of Tataskweyak and War Lake expect this relationship with Hydro to continue to grow in relation to this Keeyask project.

We believe, through the agreements that we have negotiated and through our partnership with Hydro, Fox Lake and York, we have positioned ourselves to protect the environment and to benefit, not only in the short term, but over the coming generations in many different ways.

Egosi, thank you.

MS. NORTHOVER: Thank you, Robert. That concludes our presentation.

MS. MAYOR: Mr. Chairman, we also had as part of the presentation just a few questions, so I defer to you if you would like me to ask them now of the panel, or if you would like to wait until after the break. I'm not sure what time it is.

THE CHAIRMAN: How long do you

anticipate it might be, Ms. Mayor?

MS. MAYOR: Five or ten minutes.

THE CHAIRMAN: Go ahead then.

MS. MAYOR: Thank you.

Ms. Northover, can you tell us what lessons were learned from Wuskwatim and other past projects, and how did they influence the Keeyask environmental protection plans and the environmental protection program?

MS. NORTHOVER: Environmental protection plans have been used by Manitoba Hydro for over 20 years, and from each of the plans developed, we have learned and improved on the previous.

Wuskwatim was the first generating station in Manitoba to have an environmental protection plan developed for its construction. So evaluating how it worked and how the implementation was effective has provided a lot for us for Keeyask. One of the biggest improvements is the fact that Keeyask environmental protection plans have not been written as guidelines. These documents are contractually binding and all of the clauses that are applicable to a contractor's specific work

will be implemented. To make this work we streamline the documents, trying our best to remove clauses that are not applicable. They are written in simple language, not in technical science or legal terms. This will hopefully avoid problems with interpretation by the contractors.

In the environmental protection plans that have been submitted, there has been one sample map, and we are working to develop the full series of the maps for the plans. And we have asked for a lot of feedback on those maps so that they are the most user friendly possible for contractors.

Manitoba Hydro has also conducted a thorough review of environmental protection plans that have been developed for not only transmission and hydroelectric projects, but all construction projects. And we are still reviewing those many plans as they come available. And we are now trying to particularly focus on generating stations. So we will continue to make improvements until they are finalized. And after construction begins there will still be revisions, if they are necessary.

Other parts of the program have been

improved. One of the things that we had noticed with Wuskwatim is that we needed better sediment and erosion control plans, and we have learned that and implemented for the Keeyask infrastructure project better sediment and erosion control plans, and we were able to build on that for Keeyask.

Also the Wuskwatim staff initiated a corrective action process. So if a contractor was not in compliance, there was a formal process to write that up. We have built on that for KIP, the Keeyask infrastructure project, to make it better, and we hope to have it even more formalized for Keeyask.

Another big improvement was our sediment management plan that we had in place for Wuskwatim. We gave that basically a complete overhaul, because it is a plan that the staff at site need to implement, and it wasn't written in that format for Wuskwatim, so we have changed it and made it better for the Pointe spillway project, that's what Manitoba Hydro did, and then our partners now, or the Partnership has now followed that suit that was used for Pointe, and we will apply it for Keeyask. It is again a much

more user friendly instruction manual for the people that need to implement the plan.

There have been some improvements to the monitoring plans as well. As I have said in my presentation, they are draft and they are still being worked on and improved over time, until we finish them after licences, if they are received. We added more text in some cases to provide better clarity, the inclusion of action thresholds and magnitude thresholds. We have also learned from the experience of Wuskwatim that have helped to inform the study teams that have designed those plans.

So those are several things that we have learned from Wuskwatim to make the Keeyask program better.

MS. MAYOR: For the Bipole III project, the Clean Environment Commission recommended that five years post-project a third party audit be conducted to determine whether the commitments made for mitigation and monitoring were met, and to assess the accuracy of assumptions and predictions. A further audit was then recommended five years later.

Are there any such plans on the

Keeyask project for third party audits five years and ten years post impoundment?

MS. NORTHOVER: We do not have plans for third party audits in years five and ten post impoundment. As I described in my presentation, we have a monitoring advisory committee in place that will meet frequently to oversee implementation and results of the environmental protection program.

The KCN members of MAC will have external advisors available, as I said, to help them with the oversight mandate. And Manitoba Hydro will have consultants put into the process as well. The KCNs are undertaking their own ATK monitoring, and programs that will be very closely watched are monitoring programs. The KCN members on MAC are accountable to their entire communities and accountable to all of their members, whether they support the project or not. So these First Nations are strong stewards of the land and water and have the biggest stake in ensuring they are protected.

The MAC will provide sufficient oversight and review of the implementation of the environmental protection program, as the MAC for

Wuskwatim has and continues to do.

We do intend to conduct an internal audit on the compliance with our environmental protection plans during construction, so we can learn from it and make improvements if necessary while construction is still underway.

Given the project specific nature of the monitoring program and its focus on actual effects of the project, and the efficiency of mitigation measures, it makes more sense for the Partnership to assess its monitoring program based on the anticipated timing of effects on each VEC, rather than a generic time frame. And that's what the Partnership intends to do.

All of the commitments we have made will be legally binding if the project is licensed. As I mentioned, we will be reporting to regulators and will disclose all of the results generated to the public via the Keeyask website. So several layers of reviews are already in place for the project.

MS. MAYOR: Last week all of those participating in this hearing received the Consumers Association report from Drs. Diduck and Fitzpatrick dealing with adaptive management.

Have you had an opportunity to review it?

MS. NORTHOVER: Yes, I have.

MS. MAYOR: I'm not going to refer to the report itself, I am just going to ask you some questions about comments that were made in it.

Drs. Diduck and Fitzpatrick analyzed the Keeyask project utilizing criteria from a paper prepared by Robin Gregory of Decision Research in 2006.

Did you use that same criteria or framework in approaching adaptive management for Keeyask?

MS. NORTHOVER: The framework for adaptive management that was described in the professor's paper was a substantially modified version of what was in their paper that they put forward for the Bipole III report. The list of questions that was presented in the Bipole III report was available to the Partnership after the Partnership's EIS was submitted.

The first time the Partnership saw the criteria that the doctors evaluated the Keeyask project against was when we received it on November 7th. So the criteria as presented, as

far as I know, is nowhere else in the literature, so it would not have been possible for the partnership to prepare an adaptive management framework based on that criteria. So what the Partnership has done, we were provided EIS guidelines for the project by the Canadian Environmental Assessment Agency, and the Canadian Environmental Assessment Agency has an operational policy statement on the use of adaptive management measures. This was the framework that was used to determine the adaptive management framework presented in chapter 8 of our EIS, and that's the framework that we used.

MS. MAYOR: Much of the beginning of their report speaks of the need for experimentation throughout the project. Will experimentation be used and are there any limitations to that?

MS. NORTHOVER: The discussion on experimentation in Dr. Diduck's and Fitzpatrick's report is regarding their definition that involves treating human interventions in natural systems as experimental probes. Experimentation can be in the form of active or adaptive management -- active or passive adaptive management. In terms

of mitigation, active refers to trying different measures in parallel to determine which alternative is best. It is a tool to be used when there is a good degree of uncertainty around what mitigation will be effective and when it makes sense to do experimentation.

We provided information on when we were using active adaptive management or experimentation for the Keeyask project. For example, we are confident that stocking of sturgeon is the right approach to increase sturgeon numbers in the Keeyask area. There is uncertainty about where the best place for stocking is, and whether stocking fingerlings or yearlings is the best choice. So we are trying both sizes, and different areas, and we will evaluate which is most successful over time. And then we will concentrate our efforts on what we determine is the most effective alternative.

We have also stated that to replace the 12 hectares of off-system marsh may include more than one approach at the outset.

Determining appropriate mitigation during planning through research, literature review and using best known practices is what is

expected of a proponent of a development project.

As I mentioned in response to your previous question, there is a Canadian Environmental Assessment Agency operational policy statement on adaptive management for development of projects. It states:

"Commitment to adaptive management is not a substitute for committing to specific mitigation measures in the environmental assessment prior to the course of action decision.

Adaptive management is an approach involving flexibility to modify mitigation measures or develop and implement additional mitigation measures in light of real world experience."

The proponent is clearly asked to identify mitigation and then modify if necessary based on the outcomes of monitoring. So experimenting with numerous mitigation measures from the outset would be irresponsible of the Partnership, and will not acceptable to regulators.

Plus, it was acknowledged by

Drs. Diduck and Fitzpatrick in their report on Bipole III on adaptive management that it is near impossible to use classical experimental models that employ controls and replicate treatments to determine the effects of development on -- their example was wildlife that use huge areas -- rather in designing active environmental management, experiment managers must strive to balance practicality with a rigour to provide reliable information.

So the lower Nelson River is not a contained laboratory. The cost of implementing multiple approaches to mitigation in order to discern the most effective would be cost prohibitive.

While the Partnership's approach is generally to apply mitigation measures and to monitoring to determine what mitigation measures need to be modified, the EIS and the IRs do provide several examples of this. When we are undertaking vegetation rehabilitation, we will likely go with the planting prescription that is of the highest likelihood of success. If monitoring shows that the planting is under performing, we will make modifications.

There are several alternatives that can be recommended. Which one chosen will be based on what is determined to be the issue through monitoring. This will be the case for sturgeon spawning structures downstream of the tailrace. That has been described previously, we may need to expand the shoal to other areas, or need to modify the operating regime of the station during sturgeon spawning.

Both of these are, as well as hypothetical examples where possible modifications could be required to address unanticipated changes to water quality, are referenced in the professor's report.

In addition, the tern nesting structures will be monitored and the number and location may need to be modified.

So that is our example of experimentation. Basically, if monitoring shows that mitigation isn't working, the Partnership is committed to modifications or trying other methods. And that's experimentation by the definition that's provided in the professors' report.

MS. MAYOR: Drs. Diduck and

Fitzpatrick indicate they were unclear how much external research was done and is being done to address high priority management uncertainties. They also state there was no indication of findings resulted in an actual management adjustment. Obviously, it would be a monumental task to describe all of the research that has been done and is still being done, as is covered in many places throughout the EIS and in the supplementary filings, but can you provide us with examples of what research has been done and is being done, and then indicate if the findings resulted in actual management adjustment?

MS. NORTHOVER: Most of my examples are going to be on sturgeon. So, Manitoba Hydro has had a long history of funding applied research to provide us better understanding of the types of impacts associated with hydroelectric development and types of mitigation required to manage those effects. A substantial amount of work has been used to assist in the identification of potential effects and/or design mitigation options for Keeyask.

The mitigation program for lake sturgeon at Keeyask, which focuses on stocking and

creation and maintenance of habitat, provides good examples of how this research has assisted us in designing mitigation. For one, required field studies have been conducted on the Assiniboine River and at several locations on the Nelson River where lake sturgeon have been stocked. This information, the information being generated from these studies is providing us with a better understanding on how successful stocking has been, and whether stocking efforts should focus on fingerlings, one year old fish, or a combination of both.

We have a couple of more examples. Research has been conducted by the University of Manitoba to assess the effects of using hormones to improve egg collection, in the Keeyask area, which will improve the success of spawn collection and, therefore, our stocking program.

And one more example that I will give, research has been conducted by the University of Manitoba on the marking of lake sturgeon that are too small to be tagged. This will allow us to differentiate between fish that are stocked in the Keeyask area and fish that are produced through natural recruitment.

There are other examples but I think those three will provide an understanding of how we have used research for our management measures.

MS. MAYOR: One of the criteria used by the doctors dealt with flexibility in the design of the project. The precise question asked was, is the design of the undertaking and its implementation, as well as the adaptive management strategy, sufficiently flexible to make adjustments in response to lessons learned? The paper notes, other than the environmental protection program, that they allegedly found no evidence that the project is sufficiently flexible to make adjustments in response to lessons learned.

Would you consider the design of the project sufficiently flexible in that context?

MS. NORTHOVER: There are areas where the design of the station and the physical structures associated with it are flexible to adapt to lessons learned. I have a few examples. One is our adapting to fish passage. We are going to monitor the need for fish passage once construction begins for about ten years, and if it is determined that fish passage is required, the

structure provides for us to either do different -- undertake different measures that can provide for fish passage. So that's one.

We also have the ability to adapt to changing inflow conditions. The reservoir operating range of 158 to 159 metres would not change, either an increase or decrease in Nelson River flows due to climate change, because of the design of the generating station. Higher flows result in higher frequency water levels in the upper part of its operating range and reduce daily water level fluctuations within the operating range. Lower river flows would result in more frequent fluctuations within the one metre operation range, but otherwise -- that's how we would modify.

We also have a possible adaptation to melting or frozen foundation soils beneath the dykes. That was described I think in panel 3, the project description, about the self-healing style of the dykes. And over the years we have advanced a series of bore holes at regular intervals along the dyke lines so we have a good idea where the deep permafrost is located. If during construction more is found, there will be more

sand drains installed. On this basis there should be no need to install more sand drains in the future, but we can make changes if we determine that we need more than were previously planned for.

Another item that we have is the possibility to reduce turbine mortality and injury to fish by adapting the powerhouse. So the Partnership has predicted that mortality and injury to fish that pass through the powerhouse would be low, and the low rate is determined to be related to the fixed blade design, slow speed, and other features on the turbines that specifically have been designed to minimize injury to fish. Should the actual rate of injury be larger than predicted, and it is determined in the future that this rate should be reduced, the powerhouse will be able to adapt to reduce fish injury and mortality. And this will be accomplished by modifying the trash racks.

Another example, and this will be my last example, is how we can change inflow design, adapting to changing inflow design floods. The ability to safely pass larger inflow designs can be accomplished by increasing the discharge

capacity of the spillway in the future by making structural changes, adding a spillway bay, or lowering concrete rollaways.

The commitment and capacity is demonstrated by the Pointe du Bois spillway replacement project, where the spillway is being replaced so that it will safely pass the inflow design flood. The capacity to pass larger floods can also potentially be mitigated with CRD and LWR operations.

Now, I have given you a few examples of where we can adapt. But this -- we have some flexibility with the design, but largely this is a large, expensive, concrete, steel, earthen structure that takes years to construct, involving complex coordination. So there has to be irreversible decisions.

For this reason, and because the project will be in place for 100 years or more, the project has undergone decades of planning to make sure that it is acceptable for all stakeholders, particularly Manitoba Hydro, the Partner communities, and the regulators, for the long term, not just the short term.

MS. MAYOR: I would turn to Ms. Cole

now. I just have a couple of questions for her.

There is a comment in the doctors' report about the lack of a cumulative effects monitoring program. Do you have any response to that?

MS. COLE: Yeah, when we started, I guess panel 4A many weeks ago, and we talked about the approach to the assessment, one of the things that we laid out is that we believe that the Keeyask assessment as a whole represented a complete cumulative effects assessment.

One of the reasons we laid out for that is that throughout undertaking the environmental assessment and all of the studies leading up to where we are today, we have taken a VEC based approach. And what we have looked at is the health of a VEC, and looked at the health of a VEC regardless of what may be affecting that VEC.

Going forward with our monitoring, the monitoring will continue to look at the health of each of the valued environmental components that have been considered in the EIS and that are included in the monitoring plans. So leading up to today, we have done lots of monitoring and study to look at the effects of past and current

projects. And this will help us, this helps us understand what the current environment is like, and any trends taking place, so that we can distinguish going forward any changes that may occur as result of Keeyask. If going forward we started to see a serious decline in the health of a VEC, it would certainly be the Partnership's intent to assess what is causing that decline, and to understand the role of the project in the decline of the health of that VEC, so that we can modify and adapt the mitigation being applied to improve the health of the VEC and to stop that decline.

So we are also -- there have been a couple of instances in the case of understanding the EIS where -- or undertaking the EIS and developing the monitoring program where the Partnership has really felt that a more coordinated approach is required, given the nature of the VEC being discussed. And two excellent examples of that are worker interaction and caribou. We spent a lot of time this morning talking about caribou. During the course of the socio-economic panel, we talked a lot about the worker interaction committee that's been

established with the Town of Gillam.

Well, the primary reason for doing that is so that monitoring our relation to worker interaction, which is of fundamental importance to the partnership and especially to our partners, is so that worker interaction can be dealt with in a holistic manner and not dealt with on a project by project basis, especially given all of the developments planned in the Gillam area, particularly over the course of the next ten years.

Another example that we talked about this morning is caribou. And Carolyne talked in her presentation about the development of a caribou coordination committee, which is a sub committee of the monitoring advisory committee. The reason that we have looked at that was a recognition among all of the partners that it is very challenging for Keeyask on its own to undertake a monitoring program or mitigation program for large migratory caribou herds. And that in order for us to do it effectively, we need to be able to work with others in the landscape who are also responsible for monitoring and mitigation, and to collaborate and to coordinate

our efforts so that we can have a very full picture of the health of caribou throughout their migratory ranges.

We also have the benefit as partnerships of being able to get information from several other very robust monitoring programs. So we have access to learning and information from the Wuskwatim monitoring program, which has been underway for several years now, the Bipole III monitoring program who we will coordinate with very closely, the coordinated aquatic monitoring program which Manitoba Hydro has operated for several years now, coming out of the Wuskwatim process with the province, that's providing us with information and telling us a story throughout a very broad region and throughout Manitoba Hydro's system. And Conawapa had developed similar monitoring programs implemented through that. So while we don't call it a cumulative effects monitoring program, I actually think that all of the information and all of the pieces are there for us to understand the cumulative effects on each of the valued environmental components that are being studied.

MS. MAYOR: Still with you, Ms. Cole,

there are a few references in the report to the absence of a plan or process to deal with non-communicable diseases. Can you comment on that?

MS. COLE: Yeah. This is actually specifically in reference to the -- and I believe as well in the report by Diduck and Fitzpatrick -- in reference to the findings of the IHA and the assessment undertaken by the IHA. And when we were working with the IHA and going through that assessment, there was a real concern expressed in particular that there were no formal agreements in place with, I guess standard service providers, so the Northern Health Region or other service providers, to deal with any extra demands that may be placed on in particular the Northern Health Region and other service providers during the course of project implementation, and the other was the area of non-communicable diseases.

So, in particular a concern was raised with respect to addictions issue, as well as perhaps mental health issues.

Since the time that that assessment has been completed, and we talked about this as well through the socio-economic panel, the

Partnership has worked really closely with the Northern Regional Health Authority to develop plans to assist with those matters at the site. So this has included the possibility of providing a public health nurse at the site that would also be available regionally, and also the incorporation of any anticipated increase in demand into the five year plans of the Northern Regional Health Authority.

So in the case of non-communicable diseases, workers at the site would either have the option of being referred to offsite service providers, but there are several on-site counselling services as well, which are operated through a contract with Fox Lake and York Factory, the employee retention services contract. The services through that contract are available to all workers at the site, and include both mental health and addictions counselling. And depending on demand, those services will be extended to a worker's family.

In recognition of the IHA assessment, the Northern Regional Health Authority has subsequently on its own sent a letter to the IHA indicating that they are working with us and are

committed to providing additional service at the site.

MS. MAYOR: There is -- back to Ms. Northover -- there is a discussion in Drs. Diduck and Fitzpatrick's report to environmental management systems. I'm not sure that that was necessarily included in your presentation, so could you describe for us the environmental management system to be used for the project?

MS. NORTHOVER: Manitoba Hydro has an ISO14001 registered environmental management system. As Keeyask is going to be constructed and operated by Manitoba Hydro on behalf of the Partnership, its planning, construction, and operation are therefore covered by this EMS.

Our EMS is guided by policy and is based on a simple iterative approach that's plan, do, check, act, which encourages continual improvement on how the corporation manages its impact on the environment.

Our EMS requires us to consider the environment in all that we do. This has been described in previous panels how this was done during the planning phase, and I have described

the controls that have been developed, that we referred to as the environmental protection program. That includes the mitigation measures to be employed during construction.

There are also standard corporate controls that apply to all of Hydro's operations, for example, the hazardous materials management handbook, the safety management system, environmental guidelines on transportation of dangerous goods, hazardous waste, and spill response, and many other codes of practice that are intended to reduce the impact on the environment.

A surveillance audit or EMS is carried out annually by our external auditors. This is done to confirm that the corporation is in compliance with requirements of the ISO14001 standard, and our documentation -- and our own documentation. And during the audit opportunities for improvement are identified.

During the annual audit time limitations mean that it is not possible to visit all of Hydro's operations, but what it is learned at one site is to be communicated to all other areas that the situation applies to, possibly make

wide scale improvements across the corporation.

In another construction area that's visited, there may be learning that can be applied to Keeyask construction. When Keeyask is operational, it may be determined by visiting another station that something could be improved. This could apply to all other stations including Keeyask. Of course, Keeyask will get its turn at being audited directly to determine if there is compliance with the project specific controls, the environmental protection program during construction, and station specific procedures during operations. Finally, it could prove valuable for other ongoing construction projects and future construction projects, or if visited during operations, findings could be applied to other stations. So that's how our EMS works.

THE CHAIRMAN: Ms. Mayor, I think we will take a break now.

MS. MAYOR: I am sorry, I grossly underestimated how long that would take. I apologize, it's a good thing I am not in charge of the schedule.

THE CHAIRMAN: The panel has a couple of things we need to talk about, so we will take

about a 20 minute break come back at 10 to 4:00.

(Proceedings recessed at 3:32 and reconvened at 3:50 p.m.)

THE CHAIRMAN: We will reconvene. I was prepared to make some comments about the procedural matter that's been under consideration all day, but Ms. Whelan Enns is not in the room, so I will do it at the end of the day when we break for the day. We are coming to cross-examination now. I understand there has been some horse trading. Who is coming up first? Ms. Land.

MS. LAND: I'm sorry for the delay, I thought you had more questions so --

MS. MAYOR: I said one or two, and we decided to move it along.

THE CHAIRMAN: Sorry, Ms. Mayor informed me of that off the record at the break, I should have noted that before we -- before I called upon you.

MS. LAND: Good afternoon, panel and commissioners, I just have a few questions. Thank you for your presentation. I want to first start with something that caught my attention and I believe it was said by Ms. Pachal, you will have

to remind me. You said you had done some looking around and to the best of your knowledge this was the first time, or an example that you had of a First Nation partnering, or a First Nations group partnering in the environmental assessment process for a project like this. Maybe you could remind me again of what the precise wording was that you said?

MS. PACHAL: Sure. I was talking about to our knowledge it is the first time in Canada where an EIS has been submitted jointly by a developer and a First Nation with an evaluation of equal weight, both parts of the assessment, Aboriginal traditional knowledge and western science.

MS. LAND: So you were constraining that just to the particular process of the EIS, on the submission of an EIS then in terms of partners?

MS. PACHAL: Correct, we are aware that there is lots of examples of various partnerships between developers and First Nations. And we are also aware that in certain processes Aboriginal groups have submitted Aboriginal traditional knowledge pieces into the process, but

to our knowledge this is the first time where there has been a formal two track process with the developer and the partner First Nation submitting an EIS together jointly.

MS. LAND: Right. And so are you aware of environmental assessment reviews where First Nations partners have actually participated in the scoping of the terms of reference in the development of the actual assessment itself, including the choice of who the consultants are for the reviews?

MS. PACHAL: I would say on our Wuskwatim project we did that.

MS. LAND: Okay. And just on that note, so in this case the partnership of the First Nations in the project did not extend to determining the scope of the EIS or the terms of reference for the EIS; is that correct?

MS. COLE: I think we have covered this quite extensively in several panels. The entire EIS was done in partnership. We jointly scoped the EIS. The EIS as filed, and as Mr. Neepin talked about in his presentation, was filed based on agreement that we all agreed on the EIS before it was filed. And I think all that

Shawna was talking about was that this is the first time we are aware that a regulatory submission has included with equal weight an assessment of a project undertaken based on the Cree worldview, and that the two volumes stand side by side. That's what she was referring to. I think throughout the course of the hearing we have talked a lot about partnership in this hearing and how we worked together.

MS. LAND: Right. You talked about the partnership and the two independent tracks and how they correlated with each other. I guess my question goes to were the Cree partners involved in setting the initial terms of reference that set out the scope for the environmental assessment in the first place?

MS. COLE: Well, the final terms of reference are set obviously through the EIS guidelines, but we did talk about, and our partners can elaborate at any time, the process of working together began very early on. We started working together in 2001, long before the entire EIS was scoped. And there is a detailed environmental and regulatory protocol that was agreed to early on and is included in the JKDA

that speaks to exactly how we worked together and the different structures of working together, and the answer to your question is absolutely yes, they were involved in every step of the environmental assessment. I'm not sure, George or Martina or Victor, if you had anything you would like to add to that?

MS. LAND: Maybe I should clarify because you are not really answering my question. My question is you refer to this as being an example of an Aboriginal partnership in an environmental assessment of this type, and I'm looking to examples of like the Innu Nations partnership with Nalcor on the Lower Churchill or the MacKenzie Valley pipeline with the actual pipeline group participation in the environmental assessment in those processes, and I'm wanting to distinguish and say in the case of this assessment, the First Nations, the four Cree First Nations were not part of either setting the original terms of reference for the assessment or participating in who is appointed to do the review; is that correct?

MS. COLE: Are you speaking to the regulatory review and the regulatory -- like the

EIS guidelines?

MS. LAND: No, I'm talking about the environmental assessment process, comparing --

MS. COLE: Well, I think I have answered your question. Actually I'm not really sure what you are driving at. If there is something super specific -- we have worked together on every aspect of the assessment, we have shared the findings of the assessment, the approach, all of the field studies, we have met on an annual basis actually to review field studies annually to talk about the work that's going to be undertaken and whether there are additional concerns that need to be addressed. We have collectively together reviewed the EIS and come to agreement on the final environmental assessment that has been filed. We jointly worked together to determined the valued environmental components. So I guess maybe there is something specific that you are looking for that we are missing, because I'm not understanding the question.

MS. LAND: My question goes to how you frame this as the first time that a collaboration like this has happened in an environmental assessment, and I'm trying to draw that apart a

little bit. And specifically what I will go to now is to the issue of that two track process that the panel has just spoken about now. And how that collaboration ended up happening and what that means for the future.

So, Ms. Northover, your presentation talked about how you are planning to now collaborate into the future by way of the monitoring advisory committee; is that correct? And that it is going to be the monitoring advisory committee that will be monitoring to determine if the mitigation is effective going forward; is that correct?

MS. NORTHOVER: The monitoring advisory committee is a group that's set up to oversee the monitoring and the mitigation that's being employed for the project. So I think your question asked if they were going to be doing the monitoring, and that's not the case.

MS. LAND: They are going to be determining if the mitigation is effective based on what you are finding out in the monitoring; is that correct?

MS. NORTHOVER: That's correct, in some cases -- of course, I think in my

presentation I mentioned that there are things that happen real time or very quickly where Manitoba Hydro will have to make those decisions, and then they will inform the MAC of that change, you know, changes to the management plan or changes to environmental protection plan that would be overseen by the site officers. Where MAC is the longer term, not the immediate issues, in the longer term where it takes time to monitor, MAC will oversee those, and they will have recommendations probably from ATK about what changes might be required, and then there would be input from the technical science, and so that MAC will be the forum to discuss the possible mitigation, and if it is required would take the recommendation up to the board. So I think what you have asked is yes.

MS. LAND: Is it fair to say -- your presentation mentioned that one of the reasons for the role of the monitoring advisory committee is to deal with those differences that were identified between the conclusions of the ATK and the western science, that's correct, right?

MS. NORTHOVER: That's true, yes.

MS. LAND: So if the Aboriginal

traditional knowledge was correct in predicting that the impacts are significant in a number of areas where the western science has said there is no impact, in those cases the monitoring committee will be dealing with damage that has already happened at that point, is that correct?

MS. SAUNDERS: Can I just add what was said? York Factory was involved in discussions about the scope of the environmental assessment and methods used for the regulatory approach, but more importantly York Factory decided on its own the scope of its evaluation for Keeyask, and we came up with our own report and we also had other community reports that we worked on and produced in the community. Thank you.

MS. LAND: Can I ask some follow up questions about that, and then come back to this question? So thank you for that. Are you aware of whether your First Nation was involved in initially choosing who would be on the environmental assessment panel, who heard the evidence in this case?

MS. SAUNDERS: Can you repeat that question?

MS. LAND: The question is are you

aware of whether your First Nation was involved in the process of determining who would be on the panel that is sitting today to listen to the evidence, and whether you had any participation in chipping in the process in that way?

MS. MAYOR: Can you clarify? What panel are you speaking about?

MS. LAND: I'm talking about the assessment panel, the Environment Commission, because the point is being made this is an example, the first example of a partnership like this between First Nations and a proponent on a project of this size, and the question I'm getting to is there have been many models of First Nations who are partnering on projects and how that shapes the scope of the environmental assessment process in terms of who the panel is, what the terms of reference are, and the interplay with impact benefits agreements. That may be something we will be heading towards in our final arguments, but I'm just picking up on a point that was being made by Ms. Pachal that this is the first time something like this has happened, and I'm trying to unpack the difference between what has actually happened in this process and what some of the best

standards are today across the country for First Nations corporate practices in terms of partnerships on industrial projects of this size for environmental assessment?

MS. MAYOR: Are you asking if any of these individuals played a roll in choosing the Clean Environment Commission panel?

MS. LAND: Yes. I am not asking if the individuals did, but if the First Nations played a role in determining who would be the Commissioners or the nominees who would be on an assessment panel?

THE CHAIRMAN: Well, if I may respond to that. Absolutely not. We are a completely independent body. We are a Crown agency, so I suppose our link to government is that we are paid by government, but aside from that we operate independently, as do most administrative bodies in this country. The decision of who is on the panel is ultimately my decision alone, although I do seek advice and assistance from the Commission secretary. And the members of the panel are either recommended by the Minister of Conservation and Water Stewardship, or in some cases I recommend them to him and he arranges for these

people -- those people to be appointed to the Commission.

MS. LAND: I understand that's been the practice for this particular panel and for this process. And I guess the questions I'm asking, Mr. Chair, go to what has been developing in other areas of the country with respect to environmental assessment of large projects involving First Nations, where the First Nations themselves have had the opportunity to help determine who would be the best independent nominees to the board. So, it is certainly not a criticism of yourself, sir, it is a question about the process that I would like to raise, and that we will be raising in our final arguments.

THE CHAIRMAN: I understand a little bit, particularly I think in the MacKenzie Valley process that might be the case, but that's not the case at all in Manitoba.

MS. LAND: Just so you know, sir, I will also be using the example of the Innu Nations participation in the Lower Churchill hydro project as another example of that type of a process for a very similar project to this, of a similar scope and type.

THE CHAIRMAN: I'm aware that's going on, but beyond that I don't know anything about specifics or any details of their process.

MS. LAND: Okay. What I will do is return to the question that I had for Ms. Northover that was with respect to the establishment of the monitoring advisory committee. So I had asked you if one of the reasons for the establishment of the monitoring advisory committee is to deal with those situations that have been attested to repeatedly throughout the hearings about situations where there were differences in the conclusions between the Aboriginal traditional knowledge on the one hand and the western science, so that the role of the advisory committee part is to deal with those situations where there are those differences and as a result monitoring is needed.

MS. NORTHOVER: I think the second part of your question Vicky will be in a better position to answer, because it was about those differences in predictions that happened during the assessment, so I will let Vicky answer to the whole question.

MS. COLE: It is a little bit

different than the question you answered before, but the establishment of the monitoring advisory committee is -- well, it is effectively linked to both the Partnership and the community's commitment to ongoing stewardship of the environment. And certainly there are going to be cases, and there are some cases in the EIS where there are differences in perspective between what western science finds and what Aboriginal traditional knowledge has found, but that's not why we have established the monitoring advisory committee. Even if we all agreed on all of the predictions, we would still have a monitoring advisory committee going forward so that there is a venue for all of the partners to work together in a collaborative fashion to implement stewardship activities associated with the project.

MS. LAND: I think where I was going with that question afterwards, and this is your reference to what I had asked is so in those situations where the Aboriginal traditional knowledge is shown to have been correct in -- shown that there are impacts that were significant, whereas the western science predicted

that there wouldn't be, then the monitoring advisory committee would be dealing with a situation where that damage had already occurred, is that correct?

MS. COLE: I don't want to answer the question perhaps in the way that you phrased it because in all fairness the term significance means different things to different people, and it certainly means different things in the context of a regulatory process. So a regulatory EIS is based on findings of significance, based on methodology outlined by the Canadian Environmental Assessment Agency and very specific things that are important to look at during the course of determining whether an effect is significant. And what is so frustrating and challenging with the term significance is that it leaves the impression that something is not important. And if there is one thing that I've learned over the last 15 years working very closely with the communities is that no matter the effect, no matter how big and no matter how small, if we are having an effect to the environment, it is important and it is significant. So primarily where you start to see differences between ATK and western science is not

whether or not, even documented throughout the EIS -- there is one place where there is a fundamental difference and I will talk about that in a second. But in other places it is a matter of degree and a matter of the importance of exercising caution and precaution and making sure that we are really careful moving forward to address concerns.

The one place where there is a fundamental difference, like an actual total difference of opinion, is on whether or not water levels on Split Lake will change. All of the engineering studies that we have undertaken have indicated that there will be no changes to water levels on Split Lake. Both Tataskweyak and York Factory have consistently, throughout the entire process, said, no, we think there will be some changes on Split Lake. And that is acknowledged up front in the JKDA, and it has actually become a fundamental feature of the project that we will not have a change on Split Lake during open water conditions, and that's the one place where there really is a fundamental difference of opinion.

In other cases the differences are differences that we have worked together in the

assessments so that mitigation addresses them, and a great example that we talked about this morning links to boreal Woodland caribou. Are they or aren't they boreal Woodland caribou? There is a lot of uncertainty. And it is challenging for the partnership because it is not our call from a regulatory perspective to decide whether or not they are boreal Woodland caribou, but our partners are adamant that, yes, they are boreal woodland caribou? So in order to address that we have treated them as boreal Woodland caribou throughout the entire assessment, and the mitigation and monitoring that has been developed are based on the presumption that they are boreal Woodland caribou, by taking a precautionary approach.

So I guess I'm struggling with I guess the question because I think wherever there have been differences, we have erred on the side of caution to make sure that those differences have been addressed.

MS. LAND: So you just said wherever there were differences, you have erred on the side of caution to make sure those differences are addressed. Is it not the case that in this hearing we have repeatedly heard that when there

was a difference, rather than avoidance, that the mitigation measure that was suggested instead was monitoring?

MS. COLE: In many cases it was monitoring, and in other cases there have been changes to project design, is a great example where we looked to actually avoid the effects based on concerns that have been raised.

MS. LAND: But there were indeed a number of cases where it was monitoring as opposed to avoidance?

MS. COLE: Absolutely, there are several cases where it is monitoring, yep.

MS. LAND: So in the case of the situation where you have said that you would agree that -- you were talking about the difference in the layperson's understanding of significance versus the science, and certainly I would admit I'm not the science expert, but in a situation like that, if you were given with the water levels of Split Lake where you agree that there is an absolutely fundamental difference in the findings, then in the event that the Aboriginal traditional knowledge is correct, in that case your monitoring committee will be dealing with the damage after

the fact; is that correct?

MS. COLE: I think you are basing the premise on the fact that there will be damage. I mean if there is an effect on the lake, it might be millimetres, it might not be -- I don't expect -- first of all, I don't expect there will be a change. But if there is, it may be very small and there may be no damage at all. But in that case it has become a fundamental feature for precisely that reason is that we don't expect it to happen, and if it does happen, the Partnership takes that very seriously and we will have to have some very serious discussions with our partners in terms of how to address it.

MS. LAND: So although the Aboriginal traditional knowledge has said quiet clearly that there will be changes, you are saying you don't believe that there will be that. So in other words, you are not giving weight to what the western science is saying and Aboriginal traditional knowledge is saying, what you are saying is we don't believe what Aboriginal traditional knowledge is saying?

MS. COLE: I'm not saying we don't believe it. If I didn't believe it, I don't think

we would have been as transparent and open in the EIS. What I'm saying is both knowledge systems have come to a fundamentally different conclusion. And during the course it was of great concern to our partners, so it has been addressed as a fundamental feature in the Joint Keeyask Development Agreement, and we will continue to monitor it long term to see whether in fact there are changes in water levels on Split Lake precisely because there is a difference. If we weren't giving equal weight, and we fundamentally did not respect that knowledge source, I think we wouldn't be doing monitoring because we would say, no, we are right. So I think that's absolutely a case where a lot of respect has been shown and a lot of discussion has taken place amongst the partners.

MS. LAND: So just to pick up on that then, if I could ask a question, it is perhaps a question to both Mr. Neepin and to representatives from Manitoba Hydro in the Partnership. So, Mr. Neepin said that the methodologies haven't been worked out yet in terms of how to integrate Aboriginal traditional knowledge in the monitoring going forward and that you are still looking at

the fine print in the monitoring program in his presentation. Is it correct to say that in the end it is the Partnership board that makes the decision about how to address issues that come up in the monitoring, as you figure those out or as you work out the fine print, that the result will be that it will be the Partnership board that makes the decision in the end of how to address those issues; is that correct?

MR. NEEPIN: Yes.

MS. LAND: And you also said that Manitoba Hydro has the majority of the positions on the board; is that correct?

MR. NEEPIN: Right.

MS. LAND: Is it fair to say then that one partner, the dominant partner, Manitoba Hydro, is going to be the one deciding at the end of the day what is going to happen in terms of mitigation when those issues come up as you are figuring them out in your monitoring program?

MR. NEEPIN: The monitoring advisory committee reports to the board. We would bring -- when those matters are brought forward to that level, in order for us to have assurance that they are going to be dealt with adequately, that is why

the reporting lines are directly to the KHLP board.

MS. LAND: Right. And it is the board that makes the determination in the end about what to do and how to act upon those recommendations of the monitoring advisory committee?

MR. NEEPIN: Yes.

MS. NORTHOVER: I think that Jane is going to add to that answer.

MS. KIDD-HANTSCHER: In terms of the Partnership governance structure, there is many layers to it and that has been addressed in presentations earlier in these hearings. And certainly the monitoring advisory committee consisting of the Cree representatives and Hydro, that's where the heart of the discussions will take place around monitoring. And the hope is that there will be very few instances where we have to advance issues or concerns to the board of the Partnership, and that that committee, they will do the hard work there together. Ultimately if it does have to go to the board, decisions will be made there. In my mind that's not describing that the board is running and making all of the decisions about the monitoring. Ms. Northover has

already given an extensive presentation about monitoring. So the board is not -- they are not into the daily decisions about monitoring. Hydro has delegated that responsibility under the agreement, the monitoring advisory committee will review all of the programs and results, and if they have to take something to the board they will, and then the board will ultimately make a decision.

MS. LAND: Those are all of my questions.

THE CHAIRMAN: Thank you, Ms. Land. Now in the horse trading who was to come next?

MS. PAWLOWSKA: Good afternoon, I think I'm up next.

THE CHAIRMAN: Before you -- I'm being made aware of the time and the fact that there is only about, it is 4:17 so hold off for a moment. I am sorry, Ms. Pawlowska-Mainville, I made you walk up here for nothing. We will come back to your cross-examination on, I believe it is Wednesday afternoon.

However, before we conclude for the day, I'm just going to address the panel's conclusions in respect of the procedural matter

that came before us this morning. I would note that the panel gave this very serious consideration and we, as you may have guessed, we have deliberated a couple of times over it. And I want Ms. Whelan Enns in particular to note that Mr. Bedford has made some serious comments. He has noted that this has happened before. And he has also recommended certain sanctions, including not paying for the work done by these witnesses or any expenses that they may have incurred. And I believe he also suggested that it may go so far as to terminate your participation in these hearings. And you should know that the panel did give those recommendations consideration. However, we are not prepared to go that far, at least at this time.

In respect of payment for the witnesses, it is our view that these witnesses have done their work and put in their effort in good faith, and whatever fault there may lie with their employer that they shouldn't be penalized for that, and that their work should be paid for.

I would also note that the Clean Environment Commission is very inclusive in the evidence that we accept. This evidence, I haven't

had a chance to read it yet, but it may well be of value to the Commission in our deliberations. As I noted, it will have been paid for and therefore we feel it should become part of the record.

Now there are two ways that it could become part of the record. One is that we could accept it, or both submissions or both reports as written submissions, however the down side to that is that there would be no opportunity to cross-examine and challenge that evidence. While we don't -- we make no decision on whether or not, no ruling on whether or not we accept Ms. Whelan Enns' claim that it was a diarizing error, we can see how that might happen.

I would note that we had a precedent during the Bipole III hearings that we could follow and in that case a witness was presented before the panel who brought with him a fairly significant report that we hadn't seen until that day. The decision at that time was not to exclude the report or the witness, but to reschedule the time when the witness appeared before us. So we were prepared to consider rescheduling. However, as any of you have looked at the schedule for the next few weeks will know it is very full. I'm

still not convinced that we are going to get through all of the business that we need to do by whatever day in January it is we have now scheduled as the final day. It was also noted by Ms. Whelan Enns that witnesses from out of town are flying into Winnipeg tomorrow.

So it is our view that the only day that we could hear these witnesses is this Thursday. And we would -- we have decided that we will go ahead and hear these witnesses on Thursday.

To give some perhaps small measure of satisfaction to Mr. Bedford, if at the end of the day on Thursday you still feel that your opportunity to properly cross-examine these witnesses has been impaired, then we will entertain a petition to have these witnesses come back before us, either in person or by video conference or phone conference.

I would also note to Ms. Whelan Enns that you mentioned I believe in your afternoon, when I called you back for some questioning after lunch, that the Soprovich report was not necessarily complete. I would say to you that if we are going to hear from Mr. Soprovich on

Thursday, it will be on the basis of the report that went out yesterday afternoon. There are not to be any amendments to that report.

And finally I would say, again directed to Ms. Whelan Enns, I would hope this never happens again.

So having said that, we will conclude the hearings for today. We will return tomorrow morning at 9:30 when we have a full day of Mr. Williams making presentations with a number of witnesses. And finally some reports to put on the record, or some submissions to put on the record.

MS. JOHNSON: Yes, Mr. Chairman, we have one left over from when we were last here on November 14. Janet McIvor and family presentation that we heard in the evening session that will be WPG number 7.

Today's documents are KHLP64, that's Ms. Klassen's report. 65 is Mr. MacDougal's report on the Pipestone Lake juvenile inventory. 66 is the Sea Falls juvenile inventory. Number 67 is the lake sturgeon inventory conducted in the Sea Falls to Sugar Falls region of the Nelson River. Number 68 is Assiniboine River lake sturgeon investigations. And 69 is the moving

forward presentation. 70 is the letter from Manitoba Hydro to the partners regarding the EPP.

(EXHIBIT WPG7: Janet McIvor and family presentation)

(EXHIBIT KHLP64: Ms. Klassen's report)

(EXHIBIT KHLP65: Mr. MacDougal's report on the Pipestone Lake juvenile inventory)

(EXHIBIT KHLP66: Sea Falls juvenile inventory)

(EXHIBIT KHLP67: Lake sturgeon inventory conducted in the Sea Falls to Sugar Falls region of the Nelson River)

(EXHIBIT KHLP68: Assiniboine River lake sturgeon investigations)

(EXHIBIT KHLP69: Moving forward presentation)

(EXHIBIT KHLP70: Letter from Manitoba Hydro to the partners regarding the EPP)

THE CHAIRMAN: Thank you Madam secretary. Ms. Land, you have a question?

MS. LAND: Yes, if I may, very

quickly. I would like to seek your guidance in view of the remarks you just made with respect to evidence. As you know, Peguis First Nation filed an expert report for its expert David Flanders, a mapping expert, who is appearing on Wednesday. I submitted that last Wednesday. Mr. Flanders has just flown in from Vancouver for his evidence, and he has suggested some slight amendments to his report which contains a lot of technical data with respect to mapping, and I'm wanting to know if you would like us to proceed based on the report filed on Wednesday, or based on some amendments to his report which I think will help to clarify, for your purposes, some of the evidence.

THE CHAIRMAN: If it is slight amendments clarifying technical data, I have no problem with that. It is with adding substantial changes or new pieces that were not in the original document.

MS. LAND: In that case, we will be filing an amendment this evening.

THE CHAIRMAN: Thank you. Okay, we stand adjourned until tomorrow morning.

(Adjourned at 4:26 p.m.)

OFFICIAL EXAMINER'S CERTIFICATE

Cecelia Reid and Debra Kot, duly appointed Official Examiners in the Province of Manitoba, do hereby certify the foregoing pages are a true and correct transcript of my Stenotype notes as taken by us at the time and place hereinbefore stated to the best of our skill and ability.

Cecelia Reid

Official Examiner, Q.B.

Debra Kot

Official Examiner Q.B.