

ONTARIO ENERGY BOARD

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| FILE NO.: | EB‑2013-0321 |  |
| VOLUME:  DATE:  BEFORE: | 7  June 20, 2014  Marika Hare  Christine Long  Allison Duff | Presiding Member  Member  Member |

EB-2013-0321

THE ONTARIO ENERGY BOARD

**IN THE MATTER OF** the *Ontario Energy Board Act, 1998*, S.O. 1998, c. 15, Sched. B;

**AND IN THE MATTER OF** an application by Ontario Power Generation Inc. pursuant to section 78.1 of the Ontario Energy Board Act, 1998 for an order or orders determining payment amounts for the output of certain of its generating facilities.

Hearing held at 2300 Yonge Street,

25th Floor, Toronto, Ontario,

on Friday, June 20th, 2014,

commencing at 9:38 a.m.

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VOLUME 7

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BEFORE:

MARIKA HARE Presiding Member

CHRISTINE LONG Member

ALLISON DUFF Member

MICHAEL MILLAR Board Counsel

VIOLET BINETTE Board Staff

TED ANTONOPOULOS

RON TOLMIE

CRAWFORD SMITH Ontario Power Generation (OPG)

CHARLES KEIZER

COLIN ANDERSON

CARLTON MATHIAS

ANDREW BARRETT

DAVID CROCKER Association of Major Power

SHELLEY GRICE Consumers of Ontario (AMPCO)

HAMZA MORTAGE

VINCE DeROSE Canadian Manufacturers & Exporters (CME)

JULIE GIRVAN Consumers' Council of Canada (CCC)

DAVID MacINTOSH Energy Probe Research Foundation

LARRY SCHWARTZ

KENT ELSON Environmental Defence

TAM WAGNER Independent Energy System Operator

JESSICA SAVAGE (IESO)

PATRICK DUFFY

DAVID POCH Green Energy Coalition (GEC)

PIPPA FEINSTEIN Lake Ontario Water Keeper

FRED CASS Ontario Power Authority (OPA)

RICHARD STEPHENSON Power Workers' Union (PWU)

BAYU KIDANE

TRAVIS ALLAN Retail Council of Canada

LAURA ZIZZO

JAY SHEPHERD School Energy Coalition (SEC)

MARK RUBENSTEIN

RUSS HOULDIN Society of Energy Professionals (SEP)

MICHAEL JANIGAN Vulnerable Energy Consumers

JAMES WIGHTMAN Coalition

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Friday, June 20, 2014

### --- On commencing at 9:38 a.m.

MS. HARE: Good morning. Please be seated. We are continuing today with panel 4. Mr. Shepherd, on behalf of the School Energy Coalition, you will be cross-examining.

MR. SHEPHERD: I have a preliminary matter.

MS. HARE: Yes, please.

# Preliminary Matters:

MR. SHEPHERD: On Monday, the applicant gave an undertaking to update the drivers of the deficiency. That's J3.3. It's a relatively simple calculation and they have all the numbers, because they have already filed the revenue requirement work form for their most recent update. But they haven't filed the drivers of the deficiency.

We asked for it again yesterday, because we needed it for cross today. They still don’t have it, and I would like to get a sense of when we are going to get it, because it is now starting to get in the way.

MS. HARE: Does this affect your cross for today?

MR. SHEPHERD: It does. I am going to try to work around it, obviously. I am not asking to move my cross, but it is difficult to do it, if you don't have the right numbers in front of you.

MS. HARE: Mr. Keizer, can you respond, please.

MR. KEIZER: Yes. OPG has been working on that, and they actually have been at a point where it's almost finalized. But it wasn't able to be finalized for today. It should be filed today, later today.

It's my understanding that that document in itself, the actual chart relating to the nuclear deficiency, is the responsibility of Mr. Barrett, in any event. So to the extent that anything that Mr. Shepherd can't get to it because he doesn't have the document available to him today, should be able to be addressed by Mr. Barrett when he returns as part of panel 8, as the finance panel, and dealing with the calculation of the nuclear deficiency at that time, since that is part of his responsibility with respect to that document.

But, you know, there is a lot of things going on, and people are trying to manage a lot of different aspects. Unfortunately, we are not able to have produced it this morning in advance. But certainly it will be produced as soon as it possibly can be.

MR. SHEPHERD: Madam Chair, the only comment I would make is that I want to use it to ask questions about nuclear and, to the best of my knowledge, Mr. Barrett is not an expert in nuclear.

But I will do my best without it. I think I will be able to get around it, but I am concerned that we get it sooner rather than later. But if we are going to get it today, that's fine.

MS. HARE: Well, I am not sure I understand what you are saying. If you get it today, but you are finished your cross, what good does that do you?

MR. SHEPHERD: Well, no, we still have to use it for other things. We have to use it for other panels -- for compensation panel, for example, and for the finance panel. So it is still important for other cross-examinations.

For this cross-examination, I know what the numbers are, because it took an hour and a half for me to get the numbers; it's not that complicated.

And so, I am going to put the numbers to the witness panel. Hopefully, they will know their own numbers well enough to be able to tell me I am at least in the ballpark, and then we will be able to go from there.

If that's not the case, let's cross that bridge when we come to it.

MS. HARE: I want to make sure that we are fair to you, in terms of your cross-examination.

So what you are saying, just to be clear, is that you can proceed without having this information?

MR. SHEPHERD: I can.

MS. HARE: Okay. Are there other procedural matters?

MR. KEIZER: Madam Chair, I have one preliminary matter to be dealt with, if we are finished with Mr. Shepherd's preliminary matter.

MR. SHEPHERD: Yes.

MS. HARE: Yes, I think we are.

MR. KEIZER: Thank you. This is one element unrelated to this panel, but related to an earlier panel which was part of the overview. It's just a document which we would like to bring forward to the Board, and bring to the Board's attention.

During the cross-examination of the overview panel, I believe Ms. Butcher was asked whether we were aware of any response by OPG back to the government in respect of the KPMG report. She answered that she was not aware.

After she got off the stand and finished her testimony, she did do further inquiries within OPG to determine whether or not that was the case or not, and she did discover that there was a letter -- which we can provide copies of to the Board -- which was dated June 14, 2013, to the Deputy Minister from Tom Mitchell.

It effectively is consistent with all the aspects of OPG's evidence, but we thought that for purposes of making sure that the record was complete, that once the knowledge of that document became apparent, that it should be provided to the Board to ensure that there is a completeness of the record.

MS. HARE: Yes, thank you. So we will enter that as an exhibit, and we will decide whether or not we have to have any cross-examination about that at some point.

MR. KEIZER: Understood.

MS. HARE: So, Mr. Millar, what exhibit number would that be?

MR. MILLAR: Exhibit K 7.1 is the letter from Mr. Mitchell at OPG to the Ministry of Energy, dated June 14th, 2013.

EXHIBIT NO. K7.1: Letter dated June 14th, 2013 from Tom Mitchell, OPG, to the Ministry of Energy.

MR. KEIZER: That's all I have in terms of preliminary matters, Madam Chair.

MS. HARE: Thank you. Mr. Shepherd, your cross-examination, please?

MR. SHEPHERD: Thank you, Madam Chair.

# ONTARIO POWER GENERATION - PANEL 4, Resumed

**Carla Carmichael, Previously Affirmed**

**Laurie Swami, Previously Affirmed**

**John Blazanin, Previously Affirmed**

**Jamie Lawrie, Previously Affirmed**

# Cross-Examination by Mr. Shepherd:

Witnesses, my name is Jay Shepherd. I am counsel with Mr. Rubenstein for the School Energy Coalition.

I have a compendium, which I have provided to the parties. It contains no new information and everything is from the record of this proceeding.

My friend has it, and I hope the panel has it as well.

MS. HARE: We do.

MR. MILLAR: K7.2.

EXHIBIT NO. K7.2: SEC CROSS-EXAMINATION COMPENDIUM FOR PANEL 4

MR. SHEPHERD: I wonder if I can start, witnesses --

MS. SWAMI: I am really sorry; we are having trouble hearing over here. I don't know if the mics are lower, or if the fan at the back is a bit louder today. I’m sorry, but all around the room we are just struggling hearing today.

MR. SHEPHERD: It's my soft-spoken personality.

MS. SWAMI: I am sure.

MS. HARE: Ms. Swami, if you don't hear, please mention it again.

MS. SWAMI: Yes.

MR. SHEPHERD: I wonder if you can turn to K7.2, which I think you have copies of, witnesses. The compendium, yes, page 2 of that.

And this is sort of a housekeeping thing, and it just happens that you are convenient to ask this of. This is the request for approvals in this application, updated as of March 19th.

And it has, for example, if you look in the first bullet, a revenue requirement of 6 billion, 648.8 million for nuclear. Now, that is not up to date anymore, right? Your new number is 6-billion-395.4?

MS. CARMICHAEL: My understanding is that we have filed an updated impact statement, N2, and that these numbers have changed. I just don't have the exact numbers with me.

MR. SHEPHERD: Okay. Well, I will be asking you about them later. So if you can get those numbers for nuclear, that would be useful.

But here is what I am going to ask you to do. I am going to ask you, on behalf of the company, to please undertake -- and I advised Mr. Keizer I was going to ask this -- undertake to update this Exhibit L, Tab 1, schedule 4, CCC 1, attachment 1, to reflect the second impact statement.

MR. KEIZER: That's fine, Madam Chair.

MS. HARE: So Mr. Millar, exhibit number, please?

MR. MILLAR: J 7.1.

MS. HARE: Sorry I said exhibit; undertaking.

UNDERTAKING NO. J7.1: to update this Exhibit L, Tab 1, schedule 4, CCC 1, attachment 1, to reflect the second impact statement

MR. SHEPHERD: And I am right, am I not, that – well, I will ask you this: Do you have in front of you the revenue requirement you’re requesting for nuclear? Do you know that number?

MS. CARMICHAEL: We do not have that in front of us, because primarily our panel deals with nuclear base outage, project OM&A, and some other components. So we have not seen the cumulative impact and the cumulative numbers, because that's dealt with by the finance panel.

MR. SHEPHERD: You don't know what your nuclear revenue requirement is?

MS. CARMICHAEL: We don't know the updated numbers from a cumulative basis, because I haven't been given that evidence yet.

MR. SHEPHERD: Is there another nuclear panel that can help me with this?

MR. KEIZER: Well, overall the roll-up of -- and as I indicated this morning when we were talking about 3.3, that the overall calculations with respect to the efficiencies and other aspects of revenue requirement and the calculation of that was falling to the finance panel.

MR. SHEPHERD: All right.

MR. KEIZER: If the questions relate to program matters and other matters, then this panel is capable of doing so, but to the extent that it's the calculation of the numbers and how they actually -- the impacts flow through and other aspects, then finance would be the best place to ask those questions.

MR. SHEPHERD: So I can't ask this panel questions about the impact of what they are doing, the dollar impact of what they are doing? Isn't somebody here vice president, finance for nuclear?

MR. KEIZER: You can ask -- my understanding is ask in terms of what the overall OM&A budgets are, the capital expenditure budgets, those kinds of things.

How everything rolls together within the various different aspects of the total revenue requirement, I think, is really within the context of the finance panel.

It's just simply because there are a number of other components that fall into revenue requirement. This panel represents one component of that total revenue requirement.

MR. SHEPHERD: Which is nuclear, and nuclear has a revenue requirement. They don't know their own revenue requirement?

MS. HARE: Okay. Just give us a minute, please.

[Board Panel confers]

MS. HARE: We need this panel to be able to answer questions about the revenue requirement related to nuclear costs. And so Mr. Shepherd's questions, we think, are quite in scope, and the Panel will also have questions along this same line that we expect this panel to be able to answer.

MR. KEIZER: Understood, Madam Chair. I guess my point went to the fact that there are parts of nuclear revenue requirement, such as the calculation of taxes or the cost of capital, the centrally held costs, those kinds of things, all of which form part of the nuclear revenue requirement, but -- and as indicated in one of our earlier exhibits in which we delineated the areas of responsibility, those areas were falling to the finance panel.

It's not that this panel is somehow disregarding those elements; it's just not an element which normally falls within their realm. And I understood, if I could seek clarity, that questions relating to the impacts of nuclear revenue requirement from their programs, their projects, their OM&A, their staffing, all of that, I think, is within the context of their realm and certainly can deal with that aspect.

MS. LONG: But, Mr. Keizer, one of the issues that we have that we've asked about before is this whole concept of centrally allocated costs and how it relates to nuclear. And I guess if you are saying to me that this panel can't answer those questions, then I have some concerns about that, because we really are trying to get a sense of how OM&A is put together. And the Panel has a lot of questions about this, so I would assume that this panel could answer questions with respect to how they are being allocated costs, with respect to centrally allocated costs.

So are you saying they can't answer that?

MR. KEIZER: Well, let me just clarify with the panel as to the extent that they can.

MS. CARMICHAEL: So it depends on what centrally held costs. Like corporate allocations, we have an understanding of what corporate groups, how they allocated to nuclear and what cost we bear as a result of their allocations, and basically what we are buying or paying for.

There are centrally held costs, such as pension calculations and adjustments to the pension calculations, which is part of the N2 update, and that is the area that we are not specialists in.

And so there is a group of experts that are on the finance panel that can explain why the N2 calculation or the impact of the N2 calculation adjusts the rate revenue requirements.

So out of the 253 million adjustment, 189 million of that is pension and OPEB cost changes, and those I cannot speak to.

MS. LONG: Let me give you an example. And I am sorry, Mr. Shepherd, I don't want to take over your cross here.

But one of the questions that you answered with respect to a question Mr. Stephenson had when he talked about benchmarking and how you are above the benchmark, and you talked about what the costs of those extra employees were and you gave him a number, we would like to be able to ask you how you came up with that number.

So if you are telling me that you can't go beyond what the actual salary is because you can't speak to centrally allocated costs or anything like that, that causes us some concern because then we can't understand what the number is.

And I don't know that finance is the right group to be able to delve into benchmarking with respect to costs. So that is one of our concerns, because you are the expert here with respect to staffing on nuclear.

MS. CARMICHAEL: So I can answer the question on how the -- I think it was $60 million, was that discussion. That was a calculation requested of an intervenor on calculate how many FTEs -- and it was somewhere in the 400 range -- and try to determine what the costs, labour costs of those employees would be.

And so what we did was we took our standard labour cost calculations, which is what our business plans are based on and what we actually calculate in our actuals, which include current pension service costs and also any health and benefits and things like that, so it's fully burdened rate. And we calculated the cost per FTE based on either management, what we thought would be a management staff or one of our union staff, and we did a calculation based on those numbers, which is pretty all-inclusive. So it includes pension costs and OPEB and things like that.

MS. DUFF: It includes service, current service?

MS. CARMICHAEL: Current service; exactly.

MR. BUTTERS: Not any --

MS. CARMICHAEL: Not post -- pre --

MS. DUFF: Pre --

MS. CARMICHAEL: Exactly, and not past service costs.

MS. DUFF: I think there was also an undertaking outstanding, 5.3, in which you were going to --

MS. CARMICHAEL: Exactly. I was going to provide that --

MS. DUFF: -- provide that with respect to the generating costs.

MS. HARE: I think we are digressing from what the issue is, which is what is the scope of what this panel can answer.

And so, Mr. Shepherd?

MR. SHEPHERD: Madam Chair, could I sort of try to move forward and see whether see whether there are limits that make it difficult? And maybe that will also assist the Panel in understanding what -- how broad these witnesses can answer questions, because I am sort of going towards that edge that Ms. Long is talking about.

MS. HARE: Okay. Thank you. Yes, please proceed.

MR. SHEPHERD: All right. So I am already starting my second area of questions. Could you turn to page 7 of our materials? And this is the last drivers of the deficiency. It's not the current one that we have just -- that is going to be in J3.3, but it's the last one. And the reason I am giving it to you is because I do have some questions about some components of this, and so I am going to see if we can correct the parts we need to correct right now, so that I can ask you questions about some components.

So let me just ask you first: Will you accept, subject to check, that the number 6,648.8 which is listed as the proposed revenue requirement, is now from N2-1-1, table 5 -- attachment 5, your revenue requirement work form, 6,395.4? Will you accept --

MS. CARMICHAEL: Yes, I see that on that exhibit.

MR. SHEPHERD: Okay. And will you accept that revenue at current rates with the lower production is 4,874.4?

MS. CARMICHAEL: Can you repeat that, please?

MR. SHEPHERD: Will you accept that revenue at current rates with your lower production of 94.1 -- it's 94.6, rather, as opposed to 95.1 terawatt-hours, is 4,874.4?

I think it's on page 13 of the revenue requirement report.

MS. CARMICHAEL: Page 13 of N2, tab 1, schedule 1?

MR. SHEPHERD: Attachment 5.

MS. CARMICHAEL: I will have to take it subject to check.

MR. SHEPHERD: Trust me. I checked. And will you accept, subject to check, that the revenue requirement deficiency, the current one for nuclear, is $1,521,000,000?

MS. CARMICHAEL: I believe that is the calculation that we are waiting to obtain from an undertaking. And so, I mean, subject to check and subject to the undertaking showing that number, I will accept that.

MR. SHEPHERD: It is actually in that exhibit that you have in front of you.

So the reason why I ask that is because we were trying to figure out, with all this stuff you are doing in nuclear, you are working very hard to drive your costs down, right? Why is it that your deficiency is $1.5 billion? What are the components of it?

So we think we know, and I am going to put some numbers to you and ask you to talk about each one.

First, let's deal with the numbers. The difference between the approved revenue requirement and the revenue at current rates, that difference is $377.1 million. And that number -- tell me whether this is right -- that's the amount of your deficiency that is the result of your lower production, right? Because the only difference between the two calculations is the production number.

MS. CARMICHAEL: Could you tell me what number that would have related to on the current Exhibit L, tab 1, deficiency chart 2?

MR. SHEPHERD: Sure. You have got a 7.8 terawatt-hour reduction in production from your last approved to now, right? It went from 101.9 in your last Board-approved to currently 74.6 now, right?

MS. CARMICHAEL: We are checking that. We are confirming your question. Are you asking us to validate the difference in production from the two revenue test periods?

MR. SHEPHERD: Yes.

MS. CARMICHAEL: Thank you, we will do that in a minute.

MS. HARE: Let me interject for second. Mr. Shepherd, you propose that the revenue requirement deficiency is now 1521.

MR. SHEPHERD: That's right.

MS. HARE: And the OPG panel said they would have to check that. How is it that you have got the number and they don't?

MR. SHEPHERD: They just haven't had a chance to look into tab 1, schedule 1.

MS. HARE: How did you get the number?

MR. SHEPHERD: I got it directly from their evidence. It's in revenue requirement work form. All of this stuff is in the revenue requirement work form.

MS. HARE: Well, then, why can't the panel accept that?

MR. KEIZER: I think that they can. They just haven't had a chance to pull up schedule 5.

MS. HARE: But it's their numbers, right?

MR. KEIZER: Yes, but they also don't run the revenue requirement work form. It's a complicated calculation, and finance does that. Unfortunately, that's the way it's been divided.

The way we are working in -- these panels are no different than the panels we had presented in the last case. I think it’s more that they are taking it subject to check, so that they can move the cross-examination along and they will confirm, at the break or otherwise, if somehow it's not.

But I believe it is just a matter of them being able to turn up that schedule 5 of the work form, is it not, Mr. Shepherd?

MR. SHEPHERD: Madam Chair, part of the subtext of this is I would frankly have expected senior management of the nuclear business to have very top-of-mind what their deficiency was, what their production drop was, things like that. And I am going to ask them what their increase in OM&A is, which -- I have the number. If they don't have the number, this is bad.

So that is part of the subtext of this part of the cross is: why don't you know this?

MS. SWAMI: So one of the things -- we are just checking our numbers. But if you would like to look at LPMA 6, that provides the shortfalls in the production against the approved amounts. So if you could pull that up, that's Exhibit L, Tab 5.5, Schedule 13, LPMA 6.

MR. SHEPHERD: 5.5 you said?

MS. SWAMI: Tab 5.5, Schedule 13, LPMA 6. On page 2, there is a table that shows the production variance and the revenue impact of that. I think that was the question that you were asking.

MR. SHEPHERD: Yes. So when I said your Board-approved last time was 101.9, that is 50.4 plus 51.5, right, 101.9?

MS. CARMICHAEL: That's correct.

MR. SHEPHERD: Okay. And now it's 94.6?

MS. CARMICHAEL: Under 101, yes.

MR. SHEPHERD: Sorry? 51.4 plus 51.51 is how much?

MS. CARMICHAEL: Sorry, I was looking at 2010 numbers; my apologies.

MR. SHEPHERD: So now your production in your current plan is 94.6; right? Why would you have to look that up? Don't you know your own production number?

MR. KEIZER: Look, they have a right to look at the evidence.

MS. HARE: I think that's fair. We are not taking an undertaking. We are just giving them a minute to look it up.

MR. SHEPHERD: I don't understand why they wouldn't know it.

MS. SWAMI: 94.6 is correct.

MR. SHEPHERD: Okay. So the drop of 7.8 terawatt hours; will you accept, subject to check, that that's 377.1 million of your deficiency?

And that's just the difference between 5251.5, which you will see at the top of page 7 of our materials, and the revised revenue at current rates, which is 4874.4.

The difference between the two is 377.1, and the only difference between those two calculations is the production number, because at current rates means it's the same, everything else the same, okay? Will you accept the 733.1, subject to check?

MS. CARMICHAEL: Subject to check, yes.

MR. SHEPHERD: Thank you. Then the second part of your deficiency is the Bruce lease, and that number you see in the middle, 190.8, that's the Bruce lease net revenues. Now that wasn't changed in your second impact statement, right? I am not going to ask you any questions about this, by the way.

MS. CARMICHAEL: Subject to check.

MR. SHEPHERD: Fine. I understand that's an issue for another panel, because really that's not part of nuclear operations, is it? It just happens to be part of your nuclear revenue requirement, but somebody else deals with that, right?

MS. CARMICHAEL: From this panel perspective and from the organization, yes.

MR. SHEPHERD: Okay, good. Then the next is depreciation and amortization, 75.5 million. You’ll see that in the middle, and that is your responsibility; right?

And the depreciation and amortization number has not changed in the second impact statement, has it, as far as you know?

MS. CARMICHAEL: Subject to check, I would have to --

MR. SHEPHERD: Okay. So after you leave those three, what you have left is -- everything else is increases in your OM&A. You have some adjustments to cost of capital and income taxes, but they offset each other, and everything else is OM&A.

Now I am going to ask you to confirm to me -- and I want to get this number right, and I want to make sure you are happy with it -- that your OM&A for nuclear, from Board-approved to your current proposal, is increasing by $879.4 million total.

And the way I got that -- I will tell you where it comes from. Your Board-approved for the last case was 3-billion-941.8, and that's in various places in your evidence. I don't actually have a particular reference for it, but it's all over the place.

And your current OM&A proposal in N2, tab 1, schedule 1, attachment 5, is 4-billion-821.2; the difference is 879.4 million.

So will you accept that 879.4 million is the increase in your OM&A?

MS. CARMICHAEL: I can't confirm that, because when I look at F2, tab 1, schedule 1, this is the area that I can confirm changes on.

So this is the -- this is the area that I am looking At, and there could be other areas in other contributors that I am not aware of.

So these are the numbers that I can confirm. I think we will have to wait for the updated numbers to come for me to verify anything like that.

MS. HARE: Sorry, I don't understand what you said. Updated numbers; are you talking about the Darlington refurbishment plan numbers?

MS. CARMICHAEL: I am not sure what numbers Mr. Shepherd is referring to exactly. He is throwing these numbers that out that I do not have in my evidence at this point. So I it is very hard for me to confirm these changes in numbers.

MS. HARE: Okay. I was really commenting on your comment about waiting for the updated numbers to come for me to verify anything like that.

MS. CARMICHAEL: Well, I was referring to the undertaking that we were putting together to answer the question on the changes. And so I have not seen that information, so it's very hard for me to confirm or deny those numbers at this point.

MR. KEIZER: Maybe something that would help is Mr. Shepherd is running through a number of different numbers here, from different locations, and it would be helpful if -- and I know it may take some time, but if he has a number that's in a piece of evidence which is currently before the panel, which I think is the work form, that they have the time to go to that work form, turn up the page where Mr. Shepherd found that number so they can actually see the number, and confirm that it's there and then go to the next step so we can actually do this.

I think that Mr. Shepherd is presenting the entire calculation and then saying: Confirm the difference. I think it would be helpful if they could take each piece, look at it and then be able to make a conclusion as to whether his assertions are correct, or the basis upon which it's derived.

MR. SHEPHERD: Madam Chair, I need to ask this panel about why nuclear OM&A is going up $900 million. If they don't even know it's going up $900 million, they are not going to be very helpful.

MR. KEIZER: That is not the point of my objection. My point wasn't whether they did or did not know. My point is they -- at least let them have a look at where it is in the evidence that he is citing. We'll take the time to do it and see if we can answer the question the best way we can.

MR. SHEPHERD: I can give a reference, Madam Chair, for the current proposed OM&A. It is N2, tab 1, schedule 1, attachment 5, page 5. And I am reading from the revenue requirement work form, nuclear OM&A.

MS. HARE: Just give them a moment to turn it up.

MR. SHEPHERD: N2, tab 1, schedule 1. It's the second impact statement, attachment 5, page 5.

MR. KEIZER: We have it on the screen, so...

MR. SHEPHERD: If you look at line 50. Under "Total" --

MS. HARE: Just give them a minute, Mr. Shepherd. I think they are still getting organized.

MR. SHEPHERD: Okay, but it is on the screen.

MS. HARE: I know, but they are still looking. Is the panel ready?

MS. CARMICHAEL: I have attachment 5.

MR. SHEPHERD: Page 5.

MS. CARMICHAEL: Page 5?

MR. SHEPHERD: Line 50.

MS. CARMICHAEL: I have attachment 5 goes -- so page 5 of attachment 5?

MR. SHEPHERD: That's right.

MS. CARMICHAEL: Okay. We can't see the numbers on the screen, so I have got a way to look at them a little more clearly. Okay. Thank you.

MR. SHEPHERD: So you see the number there, 4 billion 821.1, under "Total, OPG proposed, sixteen six twenty-fourteen"?

MS. CARMICHAEL: So is that row -- or column J?

MR. SHEPHERD: It is.

MS. CARMICHAEL: Okay. So I am at least in the right area. So can you tell me that number again, please?

MR. SHEPHERD: 4,821.1.

MS. CARMICHAEL: Yes. I see that number.

MR. SHEPHERD: That is your current OM&A budget for nuclear for 2014 and 2015, isn't it?

MS. CARMICHAEL: In that calculation, yes.

MR. SHEPHERD: Well, no. Either it is your budget or it isn't.

MS. CARMICHAEL: It is our budget, according to this schedule, yes.

MR. SHEPHERD: Well, do you have a different budget?

MS. CARMICHAEL: Well, no. I refer to F2, tab 1, schedule 1, table 1, which lists my total OM&A for nuclear. So that is what I am referring to. And I haven't had a chance to add those two years up, but it looks like 4.8 something.

MR. SHEPHERD: But that's been updated twice?

MS. CARMICHAEL: Mm-hmm. Yes, it has.

MR. SHEPHERD: So then that number is no longer valid, right?

MS. CARMICHAEL: Well, this is the updated table. There is an updated table, yes, and then I do not have an update to that for N2. You are correct.

MR. SHEPHERD: So do you recall that -- because I don't actually remember where the reference is for this, so I hope I don't have to go to it -- that your Board-approved for 2011/'12 was 3-billion-941.8? Do you know that number? Or will you accept it, subject to check?

MS. CARMICHAEL: I will accept it subject to check.

MR. SHEPHERD: Okay. So your OM&A has increased by 879.4 billion, which is about 58 percent of your deficiency, right? From 3-billion-941.8 to 4-billion-821.2?

MS. CARMICHAEL: That would be the difference.

MR. SHEPHERD: Okay. And so the reason why I wanted to go through this is because there is a lot of numbers on this nuclear deficiency page, but most of them are puts and takes in OM&A. The full OM&A number is 879.4, and that is what I want to the talk about. Okay?

MS. CARMICHAEL: Okay.

MR. SHEPHERD: All right. So I am going to get to OM&A in a minute. I want to ask just one question about production, because you have your production's dropping by 7.8 terawatt-hours from last Board-approved to this time, right?

MS. CARMICHAEL: We did confirm that earlier.

MR. SHEPHERD: So I wonder if you can look at pages 8 through 10 of our materials. And pages 8 through 10 are an excerpt from yesterday's transcript, in which Mr. Crocker was asking you some questions about the station containment outage and the vacuum building outage; do you recall that?

MS. SWAMI: Yes.

MR. SHEPHERD: All right. And if I can characterize -- I put the exchange here, but if I can characterize it, what you said is that recently you have recalculated the critical path on the station containment outage, right?

MS. SWAMI: No. I said that for that outage, we have determined the critical path. I don't believe -- unless you point me to a specific line where I said that. My discussion was about what that outage would look like in comparison to the past, if you will, the last vacuum building outage. And what I was discussing was that the scope of work that we need to complete based on our life-cycle management plans and the work that's required during that outage drives the critical path.

MR. SHEPHERD: No, I understand that. And if the critical path of the station containment outage is longer than the vacuum building outage, then the vacuum building outage doesn't cost you any production, right?

MS. SWAMI: A station containment outage typically in the past is a slightly shorter outage than a typical vacuum building outage.

MR. SHEPHERD: Okay. And that's in fact what your evidence says, right? Your evidence says that the station containment outage is going to be shorter, but it will be lengthened because you are adding the vacuum building outage. Isn't that what your evidence says?

MS. SWAMI: The evidence originally, I agree with you, said that. And yesterday when I was discussing this, I was discussing how when we made the decision to move the vacuum building outage, we did a net present value calculation, demonstrated that there was a positive benefit. We then -- we then looked to -- as we move along our program, we look at what's actually going to be required during that outage. Regardless of whether it was a station containment outage or a vacuum building outage, we had this work that was required to be done, which I described yesterday as emergency water system piping replacements and the emergency coolant injection valve replacement. And I talked about how that was actually driving the critical path, and that that work was required to be done during the condition when we had all four units shut down.

And that is really what's driving the critical path.

MR. SHEPHERD: Okay. So two parts to that.

First of all, the emergency water system and the emergency cooling injection system, those two fixes, they are not part of the station containment outage and they are not part of the vacuum building outage, right? They are a new project?

MS. SWAMI: They are work that's required to be done when the station is in that configuration. So if we did not –-

MR. SHEPHERD: Sorry, that's not responsive to my question.

If you do a station containment outage, you don't normally do that, right?

MS. SWAMI: We would not normally do that. Our scoping is driven by the life-cycle management plans. So in this particular case, that's how the scope or the critical path is determined.

So if all we did during a station containment outage was shut down, do the pressure test and return it, it would be one length. But while you are in that configuration, it makes no sense to take another four-units station outage, go through that evolution of shutting down, go through the evolution of starting up all the units, because that is just a reduction in production.

MR. SHEPHERD: I understand. I am not saying you are doing anything wrong by doing this, but this is not part of either of those two projects. It's a new project, right, that you have added?

MS. SWAMI: No. Every outage that we do, we go through a scoping process. And I think you will find in the evidence we describe how we do the scoping for an outage.

So this just happens to be called a vacuum building outage. It could be called a, you know, a station four-unit outage, and we would go through the same process of looking at what our lifecycle management plans require, what our testing program requires, because as I talked yesterday -- I talked about we are required to have lifecycle management plans from the Canadian Nuclear Safety Commission, and we are required to implement what we find to improve the condition of our facility.

MR. SHEPHERD: Your evidence in this proceeding says that your station containment outage is going to be shorter -- would normally be shorter, but it's going to be lengthened because of the vacuum building outage. Is that what your evidence says?

MS. SWAMI: I understand the evidence, and what I was trying to describe yesterday is that as we have gone into the scoping process, we have found that the critical path has been determined by these two elements.

MR. SHEPHERD: I heard you. First answer the question. Your evidence says shorter if it's SCO, longer if it's VBO, right?

MS. SWAMI: Typically, that's true. And that is what the evidence says.

MR. SHEPHERD: That is what the evidence says. Now, at some point you then realized, when you looked at it more closely, that that wasn't going to be true, right? That in fact it was going to be the same length, regardless of whether you included the vacuum building outage or not, right?

At some point, you determined that because of these additional things you are going to do, right?

MS. SWAMI: So I guess I -- I am pondering the question. So when we made the decision to combine the vacuum building and the station containment outage, we did a net present value that would have lengthened the outage period.

But as we went into the scoping process, as I described yesterday, we then figure out all of the work that's going to be done and we figure out what the critical path is. And that's what drives the length of the outage.

MR. SHEPHERD: I understand that. And when did you -- when did you change from what your evidence says to what you said yesterday? What was the point in time at which what your evidence said was no longer true?

MS. SWAMI: So --

MR. SHEPHERD: Just tell me when. First tell me when, and then give me the explanation.

MR. KEIZER: Well, let her answer the question, and let her answer the way she thinks she can answer it.

MR. SHEPHERD: I am actually entitled to a straight answer to my question. When did the change occur? Then explain.

MS. HARE: Please proceed.

MS. SWAMI: As I said, as we go through the outage scoping process -- I can't pick a specific date when something would have changed. It's part of the process to scope the work.

I have -- over time, the outage schedule is adjusted, to make sure that the right work is getting done. But I cannot provide on this date, this change.

MS. HARE: No, but give us a ballpark.

MS. SWAMI: I would have to check the timing for that.

MS. HARE: Would you like an undertaking?

MR. SHEPHERD: No, I think get to close enough. It wasn't yesterday?

MS. SWAMI: No, it was not.

MR. SHEPHERD: It wasn't last week?

MS. SWAMI: No it was not.

MR. SHEPHERD: Was it last month?

MS. SWAMI: It's been for some time. I think that when you look at the evidence, when we looked at adjustments to the schedule for the vacuum building outage last year as an example, we looked at what the impact would be.

So if you look at the period, we had some interrogatories asking about the adjustments to the schedules. Last year, when we were doing our business planning, we were starting to look at what that would be, and that formed part of our impact statements.

MR. SHEPHERD: When were you going to tell the Board that your evidence was incorrect? When were you going to tell them? Because it came up in cross yesterday, but that wasn't your plan, right?

MS. SWAMI: So perhaps we can open up the evidence that we are talking about?

MR. SHEPHERD: Okay.

MS. SWAMI: I believe you are referring to E2, tab 1, schedule 1, page 6 of 11.

MR. SHEPHERD: Indeed.

MS. SWAMI: And in that paragraph, starting on line 4, I believe that's what you are referring to.

MR. SHEPHERD: Okay.

MS. SWAMI: It talks about a station wide, four-unit station VBO is required by the regulator every twelve years, a station containment outage every six years.

It says an SCO also requires that all four units be shut down, but for A shorter duration. It then talks of the movement of the VBO from 2021 to 2015.

It talks about the savings of a number of outage days in line 12, right.

MR. SHEPHERD: I can read it. I am not sure what your point is.

MS. SWAMI: What I am trying to say here is it doesn't specifically say, one way or the other. And what I have tried to describe is the process that we have. As we go into outage planning, we look at this critical path and we determine it.

So when we made this decision, we looked at what the change would be, and we took an undertaking to provide that high level summary as a part of this evidence; so we will be providing that. Then I also described yesterday how, as we went forward into this planning process, we found what the critical path was, because we needed to address the emergency water system piping, and we needed to address the emergency coolant injection system.

You know, I agree it didn't happen yesterday, it didn't happen a week ago. But it's an ongoing process as we plan our outages.

MR. SHEPHERD: You say it doesn't say one way or the other. But I am reading a station containment outage also requires that all four units be shut down, but for a shorter duration.

MS. SWAMI: I agree with that statement. What I was saying is that for this particular outage, this is a reflection of the discussion of how we made a decision to move the vacuum building outage from 2021 to 2015.

I agree with you. I am not disagreeing that that is what the evidence says, and that was why I was trying to explain the change yesterday and I am trying to explain it again today.

MR. SHEPHERD: So what this implies here is that by including the vacuum building outage, you were extending the outage, making it longer.

MS. SWAMI: Correct.

MR. SHEPHERD: And that would lose you some production; we are still talking about production. That is what this implies, right?

MS. SWAMI: That is correct.

MR. SHEPHERD: That is not true anymore?

MS. SWAMI: As we went through the planning process, what we found was the critical path for this particular outage, because every outage is unique and has to be planned, that now the critical path for this outage would remain the same.

MR. SHEPHERD: So that is not true anymore, yes or no?

MS. SWAMI: It is a change in the plan. And that's reflected --

MR. SHEPHERD: All right.

MS. SWAMI: I mean, we provided an impact statement that showed all of the new production forecasts that we have.

MR. SHEPHERD: I didn't see a change about this in your impact statement; is there one in there?

MS. SWAMI: A specific change to this? No.

MR. SHEPHERD: Relating to this.

MS. SWAMI: But it would show the new production forecast that would be based on this schedule that I’ve described now. So, yes, there is a reflection of that change.

MR. SHEPHERD: So that change is in there; you just didn't tell anybody that that was the reason for it?

MS. SWAMI: I am sorry, I --

MR. KEIZER: She was asked on cross-examination to give greater details about the VBO and SCO. So, you know, it was part of an additional factual inquiry.

My friend seems to be asserting that somehow there is some means by which we have gone out to mislead the Board. Is that what my friend is asserting?

MR. SHEPHERD: Actually, yes.

MR. KEIZER: I think it's incorrect and it improper to do so, based upon the statements that are made.

MS. HARE: I think perhaps the witness should answer that. I think the question was put that you didn't tell anybody why there was a change.

That was the question, wasn't it, Mr. Shepherd?

MR. SHEPHERD: Yes.

MS. HARE: So I don't understand why the witness can't answer that.

MS. SWAMI: Sorry, I just want to bring up a piece of evidence, if you’ll give me a minute.

MS. HARE: Sure, yes.

MR. SHEPHERD: Can I ask my question a different way, Madam Chair?

MS. HARE: Yes, please.

MR. SHEPHERD: I am looking now at N2, tab 1, schedule 1, which is the second impact statement, which is the one that reduces the production, and I will read what you say.

"The updated nuclear production forecast for 2014 is 0.5 TWh lower than in the 2014 to 2016 business plan due to lower forecast production for Pickering in 2014."

That is how you explain it.

And I am looking down here to see why that is. The Pickering outage days has increased due to -- by a net 21 days. All right? So is this -- is this because of the station containment outage?

MS. DUFF: Just so we can get it, it's N2, tab 1, schedule 1, page 7?

MR. SHEPHERD: That's right.

MS. DUFF: Just so that it can be up on the screen and everyone can see it.

MR. SHEPHERD: So I am looking there for emergency water system and emergency cooling and injection system; I don't see that there.

MS. SWAMI: I would like to refer to N1, tab 1, schedule 1.

MR. SHEPHERD: Okay?

MS. SWAMI: Page 15.

MR. SHEPHERD: N1, tab 1, schedule 1? This is in December.

MS. SWAMI: I would like to refer to line 8.

MR. SHEPHERD: Okay.

MS. SWAMI: To line 15. I would like to refer to the increase planned outage days because of the VBO, because of the scope, because of the life extension activities as part of Darlington VBO, talking of the 100 percent increase in electrical equipment maintenance, significant emergency service, water piping replacement, and a 50 percent increase in emergency coolant injection valve replacement.

MR. SHEPHERD: Okay. That's very interesting, because that says that that's an increase in the vacuum building outage, not the station containment outage. And that, of course, was the issue, wasn't it? The issue was the station containment outage takes less -- is shorter, and the vacuum building outage, which you are not required to do this year, is longer.

And so because of that, putting the two together means you lose production; isn't that right?

MS. SWAMI: So I think that if we step back about what a building outage is --

MR. KEIZER: Just finish his last question. His previous question was: Did you mislead this Board by not identifying issues relating to the emergency water services or other things?

MR. SHEPHERD: That is not what I asked.

MR. KEIZER: Well, that seemed to be what was implied. And so the witness is -- I just want to make sure that it is apparent that the witness has raised and shown that there is evidence before the proceeding with respect to all of the various life-cycle management aspects that need to be done with respect to this outage.

MR. SHEPHERD: Actually, Madam Chair, I think what the witness has demonstrated is that the evidence is even more misleading than we thought it was, because they have said that the vacuum building outage was extended, not the SCO, and because of that, the problem is bigger –

MS. HARE: I think you're --

MR. KEIZER: All he's saying is that when you've got to shut down the reactor, you look at what needs to be done.

MS. HARE: I think that's a matter for argument, as opposed to posing a question.

MR. SHEPHERD: No, I understand. I guess my friend is characterizing what I have said and I wanted to correct it.

MS. HARE: Mm-hmm. All right.

MR. SHEPHERD: So you were answering about why this refers to the vacuum building.

MS. SWAMI: I am ready to answer.

MR. SHEPHERD: Please.

MS. SWAMI: So when we combined the station containment outage and the vacuum building outage, we made a decision based on a net present value that was included in our business plan. And since that time, we refer to it as a vacuum building outage.

I think we are parsing words over calling it a station containment outage or a vacuum building outage.

So when we have described it subsequently, we have talked about the vacuum building outage, and that's why it is described in this way in this evidence.

MR. SHEPHERD: Okay. I am going to leave this, Madam Chair. I think we have done this to death, but it will come up in argument.

Let me move to my next area, which is -- before I leave production, do we know -- do we have a number for how much of that 7.8 terawatt-hours of reduced nuclear production from last time to this time is the result of this -- whatever kind of outage you want to call it, this station containment outage, vacuum building outage, et cetera? Do we know the total?

MS. SWAMI: Yes. We talked about that yesterday, actually. And if you --

MR. SHEPHERD: I was listening; I didn't hear that. Okay.

MS. SWAMI: There is actually an IR on this. I believe it's AMPCO 26. I am going by memory, so let me just pull that up.

MR. SHEPHERD: Okay.

MS. SWAMI: I am sorry, that was AMPCO 30.

MR. SHEPHERD: AMPCO 30? Okay. And that has your up-to-date loss production from that outage?

MS. SWAMI: That represents the reduced production from Darlington, and it's based on N1. So that's the most up-to-date information.

MR. SHEPHERD: Okay. And where would I see the -- how many terawatt-hours it is?

MS. SWAMI: Line 28.

MR. SHEPHERD: So 3.3 of your 7.8 terawatt-hours are for that outage, right?

MS. SWAMI: That's correct.

MR. SHEPHERD: And then the rest of it appears to be mostly Pickering's forced loss rate, right?

MS. SWAMI: So you are specifically looking at N2?

MR. SHEPHERD: No, I am looking, actually, at -- the thing you just brought us to says that 3.11 terawatt-hours are the result of Pickering's forced loss rate.

MS. SWAMI: What line are you looking at?

MR. SHEPHERD: 34 and 35. Am I misunderstanding that?

MS. SWAMI: I think I am misunderstanding your question, so I apologize for that.

MR. SHEPHERD: I am trying to get the causes of your 7.8 terawatt-hour reduction. Right?

MS. SWAMI: I understand. I was just looking at another piece of paper here. So I understand what you are looking at, yes.

MR. SHEPHERD: Okay. So 3.3 was the vacuum building outage, station containment outage.

Then we have another 3.1, roughly, which is Pickering's forced loss rate, right?

MS. SWAMI: Correct. That's 3.31, as on this table, yes, this page.

MR. SHEPHERD: And is that a reduction relative to the last Board-approved? Or is that just how much that forced loss rate is costing you relative to zero?

MS. SWAMI: That's correct. It's just the amount that it's costing relative to zero. So this question was: Provide the terawatt-hour equivalent of these various components. It wasn't, you know, saying what the difference was here, there and -- and so that's a different calculation.

MR. SHEPHERD: All right. See, I guess I am looking at this and I am saying -- your forced loss rate for Pickering the last time around was actually higher, so that's not part of the cause, right? Because your forced loss rates in 2011/'12 was higher than it is today, right? For Pickering?

MS. SWAMI: That's correct. We are making improvements in forced loss rate.

MR. SHEPHERD: Okay. So that's not part of the cause, so where is the rest of this 7.8 terawatt-hours?

MS. SWAMI: So we have other outages, so we have Pickering outages. I can go through all of that. That is in the evidence of what all of the different --

MR. SHEPHERD: No, I am asking high-level.

MS. SWAMI: So we have Pickering outages. We have a forced loss rate. We have Darlington outages as well. So there is still a Darlington outage beyond the vacuum building outage in 2015 at Darlington, as an example.

MR. SHEPHERD: But in 2011/2012 you had outages too at various times, right?

MS. SWAMI: Correct.

MR. SHEPHERD: So your 101.9 terawatt-hours in that proceeding would have included the impact of a bunch of outages; true?

MS. SWAMI: That's correct. That's correct.

MR. SHEPHERD: And so you have, except for the vacuum building outage, station containment outage, you have more outages of other types as well in 2014/'15?

MS. SWAMI: No. I think that if you go back to the LPMA 6 that I showed you, we were not meeting the Board-approved levels. We stepped back as a business and reflected on that, the deficiency and the revenues, how our performance was proceeding against those approved amounts, and we ensured that our plan actually was something that was achievable.

And so that is what we have presented here; it is the most accurate that we could provide for the Board.

MR. SHEPHERD: I am not complaining about that. But that is where I was trying to go, is most of that 7.8 terawatt-hour reduction in nuclear production from last Board-approved is the result of your being more cynical, let me say, or cautious, if you like, about your forecast.

MS. SWAMI: I would say more realistic.

MR. SHEPHERD: Or more realistic, that's fine. So you have reduced your expectations from these stations, and that means it's going to cost us $377 million, right?

MS. SWAMI: We have reduced our and made our production forecasts more realistic. And as I point to LPMA 6, you can see that in every year we had a shortfall in our revenue, and that has affected OPG.

And so, yes, we are being more realistic, because we need to reflect that in our ability to continue as a business.

MR. SHEPHERD: Is it fair to characterize this -- and tell me if the this is unfair. Is it fair to characterize that in past years, your production has under-performed to plan, and so instead of increasing the performance, you have reduced the plan?

MS. SWAMI: I would not say that's necessarily what we have -- we have a shortfall from Board-approved. We have plans that we have made improvements against.

We talked yesterday at length on the benchmarking results, and talked about the unit capability factors have improved. We talked about those trends over time, that we are seeing improvements. They are just not at the levels that were approved in the last hearing.

MR. SHEPHERD: Yeah, I guess -- it appears to me that, and tell me whether this is unfair, that if your production is lower now than before. That's not an improvement.

MS. SWAMI: Well, our production -- as we talked about, a fairly significant impact of our production in 2015 is going to be that four-unit outage at Darlington. That is a fairly significant undertaking, a fairly large project. It's four units; the bigger units that we have will be shut down.

And we still have outages at Pickering that we need to continue to do, to demonstrate that we are meeting our lifecycle management plan inspection and testing and maintenance programs.

So, yes, we do have a heavy outage schedule for the next few years, that's true.

MR. SHEPHERD: All right. I was going through, step by step, the components of your nuclear deficiency; that's the 377.1 we just talked about, the lower production.

The Bruce lease, the 190.8 million; that's another panel, right? You don't want me to ask you questions about that?

MS. CARMICHAEL: That's correct, yes, please.

MR. SHEPHERD: And the depreciation number is the same since the beginning, and it's mainly driven -- the increase in depreciation is mainly driven by asset retirement obligations, which is also not your area; right?

MS. CARMICHAEL: That is correct; the finance panel will deal with those questions.

MR. SHEPHERD: I am looking forward to it. And so now we are talking about OM&A, higher OM&A to the tune of 879.4 million.

I don't want to deal with all of this, because I know the pension and other post-employment benefits component of that is not really your responsibility. You to the wear it in your budget, but we have another panel that will help us with that, right?

MS. CARMICHAEL: That is correct, the finance panel.

MR. SHEPHERD: Will you accept, subject to check, that out of that 879.4 million dollar increase in OM&A, 512.1 million is for pension and other post-employment benefits?

I don't want to take you through the numbers. Will you just accept that number?

MS. CARMICHAEL: Sure, we will accept it, subject to check.

MR. SHEPHERD: And what that leaves, and this is why I asked you that, is a $367.3 million OM&A increase for other reasons. That is what I want to talk to you about.

So from last Board-approved to now, your OM&A is increasing, aside from pensions, by 367.3 million. Will you accept that number?

MS. CARMICHAEL: I can accept that.

MR. SHEPHERD: Okay, good. And that's a 9.3 percent increase, and yet your production is failing by 7.7 percent. And so I would have thought that your target would be to be reducing your OM&A, if your production is going down.

We have heard a lot about all the things you are doing to reduce your OM&A costs. And so I don't understand why, with all those things going on, you have a 9.3 percent increase over three years.

MS. CARMICHAEL: The OM&A can be broken down into a few categories, primarily base and outage, and then there are these other OM&A components, such as corporate costs and centrally held costs make up the operating costs of nuclear.

So in terms of targeting to reduce costs and reducing our base OM&A, we have implemented quite an initiative around reducing headcount as we’ve talked about, business transformation.

We also did that in 2009. We started top-down GAAP-based business planning. So before even business transformation started in nuclear, we had already reduced almost 350 FTEs.

So from a base OM&A perspective, we have been ensuring that we are controlling hiring, reducing labour costs through that mechanism.

In terms of outage cost, much of the 300 and -- I think you said 67 million.

MR. SHEPHERD: Yes.

MS. CARMICHAEL: Is due to an increase in outage cost rate period over rate period, and I think I calculated -- here it says about 180 million, and that aligns to some of our other tables where we break down outage OM&A. And that is due to -- almost 100 million of that is due to a VBO at Darlington and other outage programs, including the mid-cycle outages and, you know, scope changes to the outages and those requirements.

So if you kind of break down the 367, there are components of it. I mean, even in this calculation, there is OM&A that relates to the refurb element, and that's the period over period change is -- there is also a change in that.

So each component has a difference, but almost 100 million of that is just due to the Darlington VBO.

MR. SHEPHERD: I understand. I guess I am asking you rather a different question.

You have this business transformation initiative that we hear big numbers about how you are going to reduce costs by a billion dollars. And yet we see an increase in your OM&A and that -- so we should be seeing a billion down, and instead we are seeing 367 million up.

That difference does not appear to me to be the result of outages.

MS. CARMICHAEL: So when we reduce our -- as I explained, we have been reducing our headcount quite significantly. However, we still have labour agreements which we -- or other costs that escalate, so there is industry escalation for material costs; every service we purchase has escalation costs.

So even though we have been reducing headcount, it is mitigating these escalation costs. So you wouldn't see necessarily the big decrease because of all the headcount reductions, because they are essentially mitigating the rest of the escalation costs.

Does that help answer --

MR. SHEPHERD: So all this work, and we are not actually going to save any money? We are going to avoid cost increases -- or we are going to offset cost increases that were otherwise going to happen. Is that right? Is that the essence?

MS. CARMICHAEL: We are reducing labour costs through reducing headcount. They also would reduce pension costs; that might be more of a long-term savings. But we are diligently managing to reduce our base costs and our -- and making our outage costs more efficient.

Now, outage costs are subject to scope, duration of the outage, what type of resource is required, and so those are sort of, on an each-year basis, need to be calculated and budgeted for.

But we are trying to reduce headcount as much as possible, and mitigate the cost escalations that we would see otherwise. And so we are driving towards those kinds of improvements.

MR. SHEPHERD: We just aren't seeing the benefit of it yet?

MS. CARMICHAEL: I think we are seeing the benefit of it in base OM&A. We are reducing our base OM&A. If we look at our actuals from 2011 and 2012 to 2014-15 plan, we are seeing a reduction.

So we are reducing in base OM&A, and then the other components adjust the total amounts, I would say.

MR. SHEPHERD: Your base OM&A doesn't include allocations from centrally held costs, does it?

MS. CARMICHAEL: It does not. It's a different line item. It's allocation of corporate costs.

MR. SHEPHERD: So when your base OM&A goes down, that is because you shifted a whole bunch of people who are still working in nuclear to centrally held costs; isn't that right?

MS. CARMICHAEL: We have shifted to -- corporate cost to corporate groups and then reallocated back. But we have looked at, generally, the net effect, and there is a small -- there is a small adjustment, but we -- through the corporate costs -- corporate groups reducing in headcount, we would see the benefit of the combined nuclear costs going down.

MR. SHEPHERD: Well, they are not going down?

MS. CARMICHAEL: Well, corporate costs don't only include headcount. They include other things as well.

So, I mean, I can't say whether insurance has gone up or down or what those numbers are. Corporate panel would be able to give you a better understanding of it, but those headcounts have reduced as well.

MR. SHEPHERD: Madam Chair, I don't know when you wanted to have a break, but I am going to move into a new area. And so if you wanted to have a break now, that would be useful.

If -- before you break, though, if I could just tell the witness panel that I am going to be asking questions about page 11 of our materials, which is a table that -- a chart that you have seen before. And I am going to ask a number of detailed questions about that, so if you want to have your materials ready, that's fine.

Thank you, Madam Chair.

MS. HARE: Okay. Let's break now until 11:10.

### --- Recess taken at 10:50 p.m.

### --- On resuming at 11:17 a.m.

MS. HARE: Please be seated. Mr. Shepherd?

MR. SHEPHERD: Thank you, Madam Chair. It would be useful for the Board to have a time check, and I do expect to finish between 12:15 and 12:30, which I think is almost exactly my two hours, I hope.

MS. HARE: I guess you have a different watch than I do, but that's fine.

MR. SHEPHERD: I am going the try to keep it as short as possible, but I do have a number of areas to deal with.

Before I get to the AG's report, witnesses, I do want to ask you a couple of high-level questions about how you manage the nuclear operations side.

You will agree, I guess, that as managers, one of the things you have to do is you to assess what people are asking for, in terms of money and resources, et cetera, against some reasonable standard, right?

You can't just accept what they tell you. You have to sort of triangulate whether what they are asking for makes sense, right?

MS. SWAMI: That's correct. We go through a process, and we are part of that process of challenging what we would put forward in a business plan. And I think that that takes place at all levels of the management team.

MR. SHEPHERD: Does one of you have primary responsibility for the nuclear business plan?

MS. SWAMI: So there is -- the preparation of the business plan is coordinated through my organization, if you will. We prepare the materials as provided by the management team. The finance organization provides information in terms of headcount, in terms of envelopes, if you will, for financial purposes.

We coordinate that. We provide that to the nuclear executive committee, and they go through the challenge process. So we are the preparers, if you will. But the final approval is done by others.

MR. SHEPHERD: You report to the chief nuclear officer?

MS. SWAMI: I do.

MR. SHEPHERD: And, Ms. Carmichael, you do as well?

MS. CARMICHAEL: I report to the chief controller.

MR. SHEPHERD: Ms. Carmichael, are you in nuclear, or are you in centrally held?

MS. CARMICHAEL: I am in a corporate group.

MR. SHEPHERD: So you are allocated to nuclear?

MS. CARMICHAEL: I am allocated to nuclear.

MR. SHEPHERD: But you work in nuclear all the time?

MS. CARMICHAEL: I only do nuclear, yes.

MR. SHEPHERD: Were you in nuclear before?

MS. CARMICHAEL: I was never a nuclear line organization person, but I always just worked on the nuclear portfolio.

MR. SHEPHERD: Okay. So when you do the business plan for nuclear -- and you do the business plan for nuclear separate from hydroelectric, right? You’re not involved in hydroelectric; you do your nuclear business plan, right?

MS. SWAMI: For nuclear; that's correct.

MR. SHEPHERD: And some of the stuff in your business plan is a given. You are told by finance to make these assumptions for these particular items, right?

MS. CARMICHAEL: That is correct.

MR. SHEPHERD: And for other things, you not told what assumptions to make, but you told how big your envelope is for those things, right?

MS. CARMICHAEL: That is correct.

MR. SHEPHERD: And how is hah envelope set? Is that set with input from you, or is that set independently of your views?

MS. CARMICHAEL: So it depends on what type of financial envelope we are talking about. But in general, the way it works is that since most of our costs are labour driven, we look at a top-down methodology of this is where you are starting at, this is the attrition we expect to see, we expect a certain amount of rehires, a very small amount, and then they give us a target of, say, headcount for the business planning period.

And then we go and calculate what that amount would be based on a standard labour rate, and then that sets the budget for labour. And then we go through the various elements of what the other costs would be.

Typically, base OM&A is just a top-down number. Outage, as I explained earlier, is a little bit different in the fact that it does -- that you do have to look at each outage and each scope in the outage, and determine what resourcing you are going to apply to it.

The other element is our project portfolio. Our project portfolio has OM&A costs as well as capital costs and, as part of the project portfolio, determination of a ceiling. They do benchmarking with our external peers to determine how much is spent in different nuclear utilities, and we develop somewhat of a benchmark approach to per unit basis and develop some sort of ceiling based on that.

So that's generally how the financial ceilings are set.

MR. SHEPHERD: I am going to come back to that benchmark approach in a second. But I just want to ask a couple of questions on some details of what you just said.

There’s a standard labour rate, which is what? The average cost of a nuclear person?

MS. CARMICHAEL: It's based on job family. So a job family is looked at across the board, and there is a standard labour rate calculated that includes salary, current pension, service costs, other benefits, and it's a calculated rate that everybody uses to determine what the costs -- to budget based on. And so there’s many job families and then if we -- as we business plan, we say we are going to have, let's say, five civil maintainers, and they would be at this rate.

That is how we calculate, because we can't do every single person’s salary and do a calculation based on that. So that is how we budget for our costs, our labour costs.

MR. SHEPHERD: Okay. And for base OM&A, basically you already know how much it's going to cost you to run the stations. You know how many people you are going to need, right?

And senior management comes to you and says we want you to tighten that up a bit to this level, and they give you a target, right?

MS. CARMICHAEL: Yes, because from a corporate-wide perspective, our objective is to reduce headcount so we look at the -- we do an attrition modelling, and we determine what those numbers would look like. So that is where we are held to.

MR. SHEPHERD: So we should see your base OM&A --regardless of business transformation, which is shifting people over to a different place, we should see your base OM&A going down on a per unit basis over time, right?

MS. CARMICHAEL: If you just -- base OM&A just included the same if it was, say, the same rates year over year. But we do know that there is escalation in our labour rates, so if you factor that out, you would see it. But because we are just -- we are reducing headcount and netting against any escalations that might occur.

MR. SHEPHERD: And then for outage OM&A and project OM&A, that's not part of your business as usual budget. So am I right in understanding that if you going to propose a major outage, that is not something you just decide in nuclear. It's a proposal. You make a business case; this is why we have to do it, this is how much it's going to cost, et cetera, right?

MS. SWAMI: So we have a standard outage program that's based, as I talked about before, on the two-year frequency at Pickering and the three-year frequency at Darlington, together with VBO -- and in the past, SCOs. But we won't be having those going forward.

So we have sort of a standard template of outages. So if we had a significant change and it would be very significant, we would then consider putting that forward as a proposal.

MR. SHEPHERD: Well, but you talk about this as if they are standard. But of course, as you just described earlier, your vacuum building outage and your station containment outage are -- it depends on what work you have to, and it could be quite different from one to another, right?

MS. SWAMI: It can be quite different. What I am talking about is there a standard frequency for which we do maintenance outages. There is a standard frequency for which we do this. That is what I thought your question was.

MR. SHEPHERD: No, sorry, I am being inelegant. What I am trying to get at is how you get to the dollars for them, and I thought I understood you to say that you assess an outage like a project. You assess what are we going to have to do and you propose it to management, this is what we think we are going to have to do, and they then come back to you and say, well, maybe you can do it for less, or maybe that's okay, whatever, right?

MS. SWAMI: That is correct. So we would look -- so the way this would work is the lifecycle management plan that we are required to do, engineering does an assessment of what that work would be that would essentially drive the critical path.

When we come back to look at our generation plan year over year, there would be challenges. Do we really need to do that work? Do we need to do this work? And we would come up with the right scope for each outage.

So each outage is different, and it's based on the lifecycle management plan. But there is also a challenge process where we look to ensure that we have the right critical path, and the right work that needs to be done.

MR. SHEPHERD: Okay. So the reason I am asking about that is because it sounds like outages -- and I assume projects are the same -- are not top-down. Fundamentally, they are bottom-up. Fundamentally, you look at what needs to be done, propose it, and you will be then challenged to do it cheaper. But nobody says to you: Ah, vacuum building outage, that's $28 million. That's all you got. Right?

MS. SWAMI: I think it's -- I would call it a combination of both. I don't think it's as straightforward as saying we get to decide to do all of the work that we want to do and we put that forward, because I think we would end up with a lot more work getting done that might not necessarily be required to be done. So there is a very --

MR. SHEPHERD: Somebody has got to be willing to say no?

MS. SWAMI: Exactly. And we have a management team that that's what we expect to happen, is to go through that challenge and make sure that we are doing right work, take on the right decision-making.

So that part of the process does look at what the scope is and we control scope, because obviously that's an important driver to the length of an outage and the cost of an outage.

MR. SHEPHERD: So once you a budget for an outage or a project -- and obviously one of the difficult issues in any of those things is scope creep, right? Where the scope expands as you doing it, right? It's a problem?

MS. SWAMI: It would be, yes.

MR. SHEPHERD: And once you have a budget, is your budget -- are you stuck with that, or can you go back and ask for more?

MS. CARMICHAEL: Which types of budgets?

MR. SHEPHERD: For outage or for a project. I understand for base OM&A it's going to be different, but for the things that are specifically budgeted?

MS. CARMICHAEL: There is a –- so, I mean, obviously there are times when we may have -- be different. We could be under budget or over budget, and there is a process whereby which we have to get approval to increase their budgets if there is a valid reason. So they have to -- it's documented, it's approved.

In the project world, there is a forum whereby which every project budget change has to be approved and challenged, particularly -- there is quite a few people sitting on that panel, senior people.

So it's -- we don't just -- we just don't agree and say let them do whatever they want. There is a challenge process, there is an approval process that they have to go through.

Typically we look at the whole and the nuclear -- we look at the nuclear as a whole. So if there is base and outage, we look at that as an OM&A together and we say -- because sometimes you would be using different resources for outages versus base, so we look at it as a combined budget and track accordingly.

So those would impact into our decision-making, but each overrun would be -- required approval.

MR. SHEPHERD: So for example, if you are working on one project and the OM&A on that project is going to be 10 million too high, your first option -- well, your first option is to be challenged as to whether you need it to be 10 million too high, right? The first step is to be challenged?

MS. CARMICHAEL: Yes, absolutely. We would not approve it otherwise.

MR. SHEPHERD: Let's say you really do need the extra 10 million. Then the next step is to see whether you can find another project or another -- other OM&A that you can cut back so that your net is still zero, right?

MS. CARMICHAEL: Well, the project portfolio is looked at as one element, and so there is evidence around how we balance that portfolio. So yes, if a certain project is going over, we look at the ceiling set for the project portfolio and balance within the ceiling.

MR. SHEPHERD: Some companies have a rule that for projects -- for example, capital projects, but I'm sure it's true of OM&A projects as well -- for example, capital projects but also it happens for OM&A projects, I am sure, the same way. Some companies have a rule that: Here is the budget you have, and if you go over on some, some of the projects won't get done this year.

Do you have a rule like that?

MS. CARMICHAEL: We do take projects off the portfolio if we don't have a budget, a cumulative budget for it. So we call it a project ceiling.

I think Mr. Lawrie has spent a lot of time, his career on this, working in this portfolio word.

MR. LAWRIE: Yes, so we use a portfolio management process for our OM&A and capital projects. Business planning processes have set the ceilings for those budgets.

We have a number of projects that are underway, and also a number of projects that we would like to start if there is budget available.

And our asset investment screening committee uses a prioritization process, meaning safety projects, regulatory projects have the highest priority, and then they go through a prioritization. And we allocate that budget to the projects with that priority ranking, as well as priority ranking in terms of schedule.

MR. SHEPHERD: And then during the year as actuals come in, you re-allocate?

MR. LAWRIE: Yes. So for example, let's say we have a project that has -- there is one part I want to explain about projects that some folks get confused. There is two parts.

We have a budget process that manages the spending rate, and that is the AISC pro -– it manages the annual spend on the project.

MR. SHEPHERD: Tell us what AISC is.

MR. LAWRIE: Asset investment screening committee, sorry.

But a project on its own has its business case. That business case clearly describes the scope, it clearly describes the cost, and the duration.

And that business case is the upper approved spending amount. The rate at which the project spends is controlled through the asset investment screening committee, which is the annual budget.

MR. SHEPHERD: I understand. So it sounds to me like in -- at least in project OM&A, and I am going to get to outage OM&A in a second -- it sounds to me like in project OM&A, once you set a budget you can't spend more than that.

It's -- you are going to spend your budget. You may spend it on different things or you may spend it on less things, but you're not spending more than that, right?

MR. LAWRIE: It is by exception, and it would take fairly senior approvals, the asset investment screening committee controls the projects within the approved business plan ceiling, and if necessary would slow or defer projects to maintain in that ceiling.

On the other side, if there's projects that are delayed and their spending is not per plan, we will look at opportunities to advance other projects so that we achieve the target.

MR. SHEPHERD: It sounds all very logical. And I guess I am asking a simpler question: If I go back and look at your past project budgets and past project actuals, will I see the actuals are not greater than the budgets?

MR. LAWIRE: There may be exceptions where in the year we made the decision to exceed the approved annual business plan budgets.

MR. SHEPHERD: Now with respect to outage OM&A, does it work roughly the same way? Are they budgeted in a similar and controlled in a similar way to projects?

MS. CARMICHAEL: So the outages are budgeted by each station group. And it is based on the scope, the types of resources would be needed, and the type of work that is being done and which groups would be working on it.

And then the budget is calculated based on resource requirements, and then there is a challenge process for the -- probably about a year long. We'd go through the outages and we look at: Is that a reasonable cost? Is that -- how does that compare to different outages?

I mean, it's very difficult because scope is always different, but we do do reasonability checks, and challenge back and ensure that we are getting the most efficient cost for our outages.

MR. SHEPHERD: Can I just stop you for a second, sorry?

What I am trying to get at with that is actually this whole notion, as you have in projects, of: Here is how much we have to spend this year. And you can't -- if something goes over, something else has to not get done; is that right?

MS. CARMICHAEL: From a budgeting perspective, it's -- they are unique. However, when the budget is cast for the year, we do look at trying to offset any overages in other areas.

So the portfolio is managed as, one, we look at base and outage OM&A together as well throughout the years, throughout that year that the budgets exist and the actuals are coming in, so -- but it's not a top-down -- you are getting -- you had 100 million last year, you get 100 million this year. It's not the same budgeting process.

MR. SHEPHERD: In fact, unlike with projects, where you can reprioritize and move money around, with outages you have to do them, right? You don't really have a choice in most cases, right?

MS. SWAMI: That's correct, because the outage program is largely driven by completion of regulatory requirements. So there are certain things that we have to do in order to ensure ongoing safe operation.

So to a larger extent, it's more fixed. However, you could look at a particular outage and look for improvements and offsets, if you will, to try to make the improvements that were possible if necessary.

MR. SHEPHERD: Understood. Understood. But at the end of the day, you're still -- you still have to do the outage. If it costs more than you thought it was going to, you have to eat it, right? You don't really have much choice?

MS. CARMICHAEL: If it's a required outage and its scope is required, we would have to do it.

MR. SHEPHERD: Yeah. You've mentioned a number of times how as managers you sort of benchmark the costs that are being proposed, and I assume senior management also does this, right? When they get proposals from you, they are benchmarking to what they think is reasonable, right?

MS. CARMICHAEL: Typically, yes, they would be based on their understanding and knowledge in the industry. Most of our senior managers have many, many years of experience.

MR. SHEPHERD: So this is not benchmarking in the formal sense, where they say we have a study that shows how much this should cost. This is, I have been doing this for thirty years and I know how much it should cost, right?

MS. CARMICHAEL: What I meant is they don't do benchmarking per se. But the people under them probably do a lot of formalized benchmarking, just like we do the Goodnight reports. We do a lot of benchmarking which they would use to make their decisions.

But they don't -- they don't specifically do the benchmarking. I thought that was your original question.

MR. SHEPHERD: No, no. And the reason I am asking about that is because we haven't actually seen a whole bunch of information on formal benchmarking by Ontario Power Generation.

We know about the Scott Madden report, and we know about Goodnight and stuff like that. But, for example, things like benchmarking your -- the cost of a vacuum building outage, let's say, or benchmarking even a component of it, something like repairing emergency coolant systems. You do that, right?

MS. SWAMI: We repair emergency coolant --

MR. SHEPHERD: You benchmark it to how much it costs other people to repair them?

MS. SWAMI: So we can't specifically do a cost comparison, because each one of those activities might be unique to the technology. I think I spent some time yesterday talking about that uniqueness.

But what I did also talk about was that we, as participants of the World Association of Nuclear Operators, members of our management team and staff would participate, let's say, in an outage managers working group, where they would talk about ways and means of being more efficient in the work.

So it's not a formal benchmarking process. But for many years, we have gone through looking at what other people do, adopting those practices, and bringing them back to OPG.

That's just a normal part of the way we do it. It's just not formalized into a benchmarking report per se, because this is the day-to-day work that we expect our staff to do.

MR. SHEPHERD: So the -- I thank you for that. My experience is that managers, especially in large organizations where they are quite a long way away from what is actually happening on the ground, that managers need to have some sort of reference point, objective reference point against which they can test whether what people are asking for or what people are proposing is reasonable.

It could be dollars. It could be how many people it takes to fix something, things like that. And so I would have thought that for you to assess what people are proposing, that you would need objective reference points. And it sounds like you don't have a whole lot of them; is that right?

MS. SWAMI: I guess I am unsure of what you are driving at, because – I have talked about participation in the World Association of Nuclear Operators. As an example, we could send our managers to sit through an outage at another facility, as an example.

So they would get that experience and understand the work that would be done. That manager may have worked their way up from the shop floor in our facilities, which is the way typically people work their way up, by actually working in the plant, participating in the operation, participating in outages as a worker, to a section manager to a manager, so they have those references without having to say formally what they are.

The other thing that we have in our program is that in our work management system, we would have how many hours did it take to do a particular job. And we would be able to see, you know, if we had to replace of this size in this condition, how long would we expect that to take.

The workers would do the job, and the management team, the section managers, FLMs, would be in a position to understand how long should it take, and here is what we want you to do to make improvements.

So they are not formal benchmarks, but they are certainly a comparator that we would use on an ongoing basis.

MR. SHEPHERD: So that is exactly what I am driving at, thank you. That is exactly where I am going.

If a manager says this repair has to be done and it's going to take seven people 21 to do it, you don't just have to accept that, right? You have data available to you to say whether that -- what they are asking for is reasonable, is that right?

MS. SWAMI: That's correct.

MR. SHEPHERD: And do you have a system for that?

MS. SWAMI: We have a work management system, which tracks and records how long it's taken in the past to do work. So we would have that information, yes.

MR. SHEPHERD: So that is internal benchmarking; it's how much it has cost you to do it?

MS. SWAMI: Correct.

MR. SHEPHERD: But you have no external information of that nature? Only internal?

MS. SWAMI: To my knowledge, we have internal information.

MR. SHEPHERD: So if you are doing it or have done it in the past efficiently, then you can hold people to that efficient standard, right?

MS. SWAMI: Correct.

MR. SHEPHERD: But if you have done it in the past inefficiently, then the standard you would be applying would be an inefficient standard, right?

MS. SWAMI: I understand what you are saying. But I guess went I look at that, it’s not just that we say that's okay, we will just continue to do it that way. What we challenge our managers to do is look for improvements and more efficient ways of doing work.

So we talked a lot about the business transformation program, and a lot of that is looking at how can we do more work more efficiently.

So we are expected, as the management team, and our section managers to our first line managers are always charged with looking at how can I make this a more efficient job.

So they may have that base of here’s what it took the last time, but that doesn't mean they say, okay, that is what it took the last time, that’s what it’s going to take the first time.

So I talked a little bit about some specific examples yesterday, where we changed, for instance, the tooling that we are using for inspections, so we could reduce the number of hours it was taken at each channel visit. That's an example of what we would do.

So while those numbers exist, it doesn't mean we say, well, that's the number and therefore that's the number. We are constantly on a track of looking for those improvements, because we need to make our outages as efficient as we can.

MR. SHEPHERD: All right.

MS. HARE: Let me interject for a second. Ms. Swami, you said FLM, which I guess you mean to be first line managers.

MS. SWAMI: Yes.

MS. HARE: Could you try to avoid those acronyms and say what it is?

MS. SWAMI: Yes, I will.

MR. SHEPHERD: Thank you, Madam Chair. I didn't know what it was either. You knew what it was, but I didn't.

MS. HARE: Well, because she said it later.

MR. SHEPHERD: I wonder if you could turn, witnesses, to page 11 of our materials. This is something you talked about yesterday. This is the table which -- this table actually came originally from the Goodnight report, is that right? This is just a --

MS. CARMICHAEL: It did. It's a compilation of the Goodnight functions.

MR. SHEPHERD: Okay. So here is what I would like to know. What you said yesterday, as I understand it, is that you don't necessarily agree with these judgments about under-staffing and over-staffing in each of these areas, right?

You understand that the AG benchmarked to those, or Goodnight did. But because of your unique situation, in some cases you think you actually need more or less, depending on the circumstances, right?

MS. CARMICHAEL: I mean, I am not sure I said I disagree with the findings, because I don't believe I said that.

But what this is is an indicator of areas we need to focus on. And so we are focused on looking at the details behind each of the over and under benchmark areas, to determine why there is a difference and whether we can be doing something about the difference.

And there may be at times justification. I think Ms. Swami had an example yesterday on the radiation protection processes that are very different in the Canadian -- in our operation versus other operations, that justify that we would have a difference between our numbers and the benchmark numbers.

MR. SHEPHERD: For example, that's the one on the far right, right? It says that you are under-staffed by ninety people or something.

But you don't really think that's correct, because you do it a different way and you don't actually need ninety more people, right?

MS. CARMICHAEL: Well, there is a number that's a benchmark number and because our processes are different, we would keep -- we would not increase our numbers to meet the benchmark numbers.

MR. SHEPHERD: In some of these, is it true that you agree that the benchmark number is a reasonable number to attain?

MS. CARMICHAEL: We believe directionally that these numbers are correct, especially on perhaps the left-hand side, where we need to reduce headcount. However, we haven't been able to digest completely all the details on what these numbers make up.

I think I explained yesterday about budget and finance having different components in it. So once we understand the drivers behind each one of these groups, we can then determine specifically what can be done or not.

However, we do know in maintenance, construct support and facilities, we know that through business transformation these numbers will reduce and that that is the appropriate thing to happen.

MR. SHEPHERD: When did you get the Goodnight report?

MS. CARMICHAEL: We received the Goodnight, first Goodnight report in -- what were the dates?

MR. SHEPHERD: 2012, right?

MS. CARMICHAEL: 2012. And then the following one May of 2013.

MR. SHEPHERD: So -- and you are not yet -- have not yet concluded what the right numbers are for these areas, from your point of view? You haven't made that determination yet?

MS. CARMICHAEL: We are currently working with Goodnight to understand truly what the industry -- what the industry numbers -- how they are made up, so why are we so different in certain areas. There is a lot of variances and variables associated with these categories and the processes behind these.

So we are actually in the midst of doing that type of formalized work, to understand and be able to set reasonable expectations in these functional areas.

MR. SHEPHERD: Here is what I don't understand. That was two years ago; that seems like an awful long time to be trying to figure out what the meaning of the report is for you, number one.

And number two, your business transformation program started in 2012 and is supposed to end next year. So I don't understand how you don't know what your target is yet.

MS. CARMICHAEL: We do know what our targets are, because our targets are in our business plan and there is a business transformation target.

The challenge for us is that these are based on a functional perspective, and our organization -- our targets are based on an organizational basis.

And to get any sort of data and detailed understanding, it requires detailed mapping done by Goodnight. And so it's a little complex to say, you know, how each organizational person fits into these functional categories.

So that is what we are working on, to understand what the business transformation specifically means to each of the functional groups. We did do an overall calculation of -- through our business transformation, we know the organizational headcount will go down. How does that affect these numbers overall?

So we do understand that. We have stated that we will be within overall benchmark by the end of 2015.

MR. SHEPHERD: Sorry, I am not -- what I was asking about was actually the other way around. I am not really as interested in where do you end up as a result of your business transformation initiative. I am asking the other question.

They told you you are offside on these benchmarks. The benchmarks aren't exactly accurate for you, at least not in every case. And so you need to know what is your real benchmark, what is the real target for each of these.

I am asking: When are you going to have that? Do you have that yet?

MS. CARMICHAEL: We are in the midst of working with Goodnight. We have -- they have been working on this for us this year. And we do expect more information on this by the end of this year, to understand how we -- what the imbalances are, where we can fix the imbalances, what imbalances are appropriate for us to have due to different processes or different strategies, and then set the functional, say, targets rather than organizational targets.

MR. SHEPHERD: In response to the Auditor General's report, you issued a press release, which you will find on page 13 of our materials, which listed a bunch of things that you are doing. And I quote:

"The following is a summary of key actions OPG is taking or has taken to address the findings."

So now I want to go -- you then updated that in JT2.26, which you will find at page 17 of our materials, adding some additional things but also adding some additional information.

I wonder if you can just take a look at that, because I would like to ask you a few questions about that, if you don't mind. Starting on page 18; do you have that?

MS. CARMICHAEL: I do.

MR. SHEPHERD: The first thing I generally note is you see under the third bullet in the first box:

"Reduce headcount by a further 830, for a total of 2,330 and a billion dollar savings by 2016."

I know only part of that is nuclear, but a lot of it is nuclear, right?

MS. CARMICHAEL: A lot of it would be nuclear.

MR. SHEPHERD: So the billion dollar number is still right, is it?

MS. CARMICHAEL: I would have to defer to the panel who looks after business transformation, who did this calculation.

MR. SHEPHERD: Fine.

MS. CARMICHAEL: But it's in our OPG -- OPG produced this.

MR. SHEPHERD: No, I understand. What I was really going to ask you is: How much of the billion is nuclear?

MS. CARMICHAEL: I don't believe I have that specific information. I don't know exactly how much of the billion dollars would be applicable to nuclear.

MR. SHEPHERD: Can you undertake to provide that?

MS. CARMICHAEL: I could undertake to provide information from that, that team, yes.

MR. SHEPHERD: Thank you.

MR. MILLAR: J7.2.

UNDERTAKING NO. J7.2: with reference to JT2.26, page 18, TO EXPLAIN HOW MUCH OF THE billion DOLLAR REDUCTION IS FROM NUCLEAR, AND HOW MUCH OF THE 2,330 HEADCOUNT reduction applies to NUCLEAR.

MR. SHEPHERD: This billion dollar number, that's not your number, right? It's the company's number?

MS. CARMICHAEL: It is a number that the company has determined. And I believe there is an IR that the corporate group and overview group has provided on some of the calculations, but I don't believe it breaks down nuclear information.

MR. SHEPHERD: What I am really going for here is: Have you been told how much of that billion you are responsible for?

MS. CARMICHAEL: Nuclear is responsible for hitting the headcount targets that were set. And so if we hit those headcount targets, we -- our expectation is that we will meet the target that is set by the company.

MR. SHEPHERD: And your headcount targets include stuff that is shifted off to centrally held, right?

MS. CARMICHAEL: The targets are set by corporate for all headcount groups. So nuclear gets their targets, corporate groups get their targets. And through the allocation methodology, the corporate support people that support nuclear are the same -- are targeted as well.

So there is a target set for every organizational group.

MR. SHEPHERD: But part of your target is to reduce headcount for people who will then go over to centrally held and be allocated back to you, right?

MS. CARMICHAEL: They have already been moved, so I can't target it right now. But what we do in the nuclear group is we look at the services provided by these groups and ensure that we are getting efficient service, and also challenge back the support that we are needing.

So there is a bit of challenge back and forth between nuclear and the support that's being provided, to ensure that they are meeting their targets, we are not getting extra allocated dollars, because we -- it's included in our total generating costs, and we want to benchmark as well. Right? We want to benchmark -- have our benchmarks show performance improvement. And corporate costs do contribute to that.

MR. SHEPHERD: Okay. So out of that 2,330 of headcount, how much of that is yours, your responsibility?

MS. CARMICHAEL: So we have a business plan that shows our headcount reduction targets, and that is N1-1-1. That's our most updated business plan.

So it shows from 2013 forecast to 2016 that we are reducing in core operations from 5,674 to 5,222. As well as there's other projects and mods groups that would be included in our calculations.

In general, we have reduced headcount by 350 up to 2011 and we continue to reduce headcount. I don't have the exact number that we make up for the 2,330, because I am not sure what year it starts and what year it actually ends, but we have a consistent reduction of headcount that contributes to that 2,330.

MS. HARE: Just sorry to interject. You said "mods groups"; what does that mean?

MS. CARMICHAEL: Oh, it's our projects and modifications group. It is just below where it is called pro -– under "Projects," and there is certain element of headcount in there that is also under our responsibility.

We -- the refurbishment group has -- is a different -- different trend line, let's say, because they are organizing for a new project, and their numbers are escalating due to the project requirements.

It's attachment 5, I'm sorry.

MS. HARE: Okay. Thank you.

MR. SHEPHERD: Madam Chair, I don't think I got an undertaking number for the first part, which is how much of the billion is your responsibility.

But can you also add to that how much of the 2,330 is your responsibility?

MS. CARMICHAEL: I can do that.

MR. MILLAR: I think there was an undertaking for that, Madam Chair.

MR. SHEPHERD: Was it can we add that to it? And can you tell me what the number is?

MR. MILLAR: It's J7.2.

MR. SHEPHERD: Then if you take a look at the first bullet in that section, under "executive senior management staffing levels", you see "decrease senior management headcount."

Now within the nuclear group, do you have any people who are categorized as senior management?

MS. CARMICHAEL: We would.

MS. SWAMI: Yes.

MR. SHEPHERD: You do.

MS. SWAMI: Yes.

MR. SHEPHERD: And have you decreased the headcount for senior management in nuclear?

MS. SWAMI: So when we did business transformation, we struck what I would call the senior management group; that would be vice presidents and above.

MR. SHEPHERD: Yes.

MS. SWAMI: And that group was set, and a structure was proposed with a change to that number, and that was the way we targeted to do that. So that the senior management group, while it’s not shrinking today, was set at, I would say, a reduced number at that time.

I don't have the specifics; it's not a large group of people.

MR. SHEPHERD: Are we talking about a hundred people or twelve?

MS. SWAMI: In the senior management ranks? Off the top of my head, in the range of twenty. That's strictly off the top of my head. I would have to go and --

MR. SHEPHERD: And in nuclear, you haven't reduced that since business transformation --

MR. SAVAGE: I would like to break this down a bit, because there are senior management in nuclear operations and nuclear refurbishment. And though, overall, there was some element of senior management group increasing at certain times, much of that was due to refurbishment organization being created.

I think we should take an undertaking to provide you with the details of those two groups.

MR. SHEPHERD: Well, what I am going to ask you to do in fact is -- there is an undertaking response, I am just looking for it now, that was just filed today, which -- I am just trying to find the number. Maybe Mr. Anderson can help me.

This is the one where you restate the FTE table to take out the pension and other post-employment benefits.

MS. CARMICHAEL: Is that JT2.33?

MR. SHEPHERD: It was JT2.33, and then it's been updated. It was filed today.

MR. ANDERSON: Sorry, Mr. Shepherd. Was it filed today, or was it filed last evening?

MR. SHEPHERD: Well, it all runs together. It was in the last twenty-four hours.

Anyway, you know the one I’m talking about, right?

MR. ANDERSON: I am not sure what number it is. I would need to look it up.

MR. SHEPHERD: What I am going to ask is: Can you do that table, exactly that table that has already been filed, for just nuclear?

MS. HARE: I will let them answer, but I think if they don't have it in front of them to is see what the table is, they don't know what you are asking them to update; is a that fair?

MR. SHEPHERD: Well, they have seen JT2.33, which is the basis for it.

MS. HARE: Right, and you say it has been updated. So I think it would be fair for them to see the updated, before they agree to do something more to it.

MR. KEIZER: I guess we could -- I am trying to figure out how to actually be of assistance here. But we could look at it to see whether or not we could do it. If we could do it, then do it; if we can't, then we would say why. Is that fair?

MR. SHEPHERD: Madam Chair, it is J3.5.

MR. MILLAR: So the undertaking is to look at J3.5 and update it for just nuclear. Or, if that can't be done, to explain why.

MR. KEIZER: Yes.

MR. MILLAR: And that will be J7.3.

UNDERTAKING NO. J7.3: WITH REFERENCE TO UNDERTAKING J3.5, TO UPDATE IT JUST FOR NUCLEAR; IF THAT CAN'T BE DONE, TO EXPLAIN WHY

MR. SHEPHERD: I will just comment, Madam Chair, that a lot of this is already broken down into nuclear. What I am looking for, the part I am concerned with is at the end of this is split up between the various categories of personnel – management, Society, PWU -- and that's not split up to nuclear and non-nuclear. That is the part I am looking for.

MS. HARE: I was just going to add one thing, Mr. Shepherd, that if in fact the witnesses come back and explain why it can't be done, that we will give you an opportunity to ask another question. Is that fair?

MR. SHEPHERD: That is fine. I think they will find it's a relatively easy thing.

MR. KEIZER: Sorry, maybe if I could ask, maybe someone from OPG will be able to slide upstairs and see if we can actually obtain a copy of this before Mr. Shepherd finishes his cross, and maybe put the table in front of the witnesses at that time, so that we can deal with that.

MS. HARE: That is fine, or he can, you know, look at it after the lunch break, and we will give him a couple of minutes if there is a problem.

MR. SHEPHERD: Thank you, Madam Chair.

MS. HARE: And there might not be a problem.

MR. KEIZER: Again, maybe I was anticipating him finishing sooner than that.

MR. SHEPHERD: So am I. Let me just ask you a couple more things about these actions planned and underway that you have got here, in response to the Auditor General's report.

You have some new things added in the second section. The second section is "benchmarking of staffing levels at nuclear facilities". So that's right in your -- that's all your responsibility; right?

MS. CARMICHAEL: That is our responsibility.

MR. SHEPHERD: And you see the third bullet? It says:

"New - Update benchmarking results to measure against changes relative to the industry," and you talked about that yesterday, and tell me whether I understand this correctly.

This updates your benchmarking to the fact that the industry is growing faster, and so you actually look better relative to the industry because your costs are not increasing at the same rate as the rest of the industry; is that fair?

MS. CARMICHAEL: Can you break that question down? I think there was a two-parter there.

MR. SHEPHERD: Okay. Well, then it was -- that's my fault for not saying it right.

What I understood you to say yesterday is your benchmarking has to take into account the fact that the rest of nuclear industry, their costs are growing faster, like they’re -- some of them are six, seven, eight percent a year. And so relative to that growth, you are not growing as fast, so you're benchmarking better over time, right?

MS. CARMICHAEL: I was referring to Pickering at that time, that Pickering is not escalating in terms of costs as fast as the industry.

But I believe this point around benchmarking and staffing levels, we also -- we look at the benchmark and -- well, Goodnight develops the benchmark and there are industry changes. So then we measure against that industry change benchmark.

MR. SHEPHERD: Okay. Now, one of the things about this -- I am still on page 18 -- is not all of these are listed as actions in response to the AG report.

Your press release said we are doing those things, these things, in response to that report. But here you are saying, well, no, some of these are not in response to that report at all, right?

MS. CARMICHAEL: Many of these actions were already underway.

MR. SHEPHERD: And it wasn't because the Auditor General said you should be looking at these things, or anybody else. It was because of your business transformation plan, in many cases?

MS. CARMICHAEL: Many of them, yeah, there could be other initiatives that were underway in all other areas, not just business transformation.

MR. SHEPHERD: All right. And the other thing I noticed in this is -- you were asked in the undertaking to provide the associated cost savings for these, and I am looking down and in the four pages, there is only one that has a cost saving. That's on page 2, $2.7 million.

So all these things that you are doing in response to the Auditor General's report, none of them have a cost saving listed, except one.

I don't understand that. Some of them look to me like they should save you lots of money.

MS. CARMICHAEL: Unfortunately, I can't speak to this table in terms of how the cost savings were calculated and this column prepared.

I believe yesterday we talked about the next panel being able to provide more detail on the Auditor General response.

MR. SHEPHERD: And that's a fair comment. But, for example, on page 2 you have centralized recruitment function to improve controls, compliance, and efficiency of hiring processes.

You are actually hiring nuclear people differently now than before, right?

MS. CARMICHAEL: Well we -- even before business transformation was implemented, because nuclear was already intent on reducing its headcount, we had a controlled hiring process. Basically, if a manager wants to hire, they have to come into a forum and provide what we call a -- somewhat of a business case to understand why they need to hire, particularly if it's – if we are not deeming it to be critical job families; so like plant engineering and operators and groups like that.

So we had implemented a formalized hiring process a few years back, before even the business transformation started, or the Auditor General report.

MR. SHEPHERD: Okay. You have another bullet on page 19 of our materials, the second page of the attachment:

"Reduced base salary cost for management by 9 percent compared to 2010."

Have you been able in nuclear to reduce base salary costs for management by 9 percent?

MS. CARMICHAEL: I am going to have to refer that to the next panel. That's the compensation panel. He would be able to advise better on that question.

MR. SHEPHERD: Okay, but I am only asking about nuclear.

MS. CARMICHAEL: I don't have the specific management nuclear costs.

MR. SHEPHERD: Okay. Thanks.

And the only other one I wanted to ask you about this is on page 21 of our materials, page 4 of the attachment. This stuff about managing contractors and staff overtime, a lot of that is you, right? A lot of that's stuff you have to do?

MS. CARMICHAEL: That is the nuclear group, yes, if that is what you are asking.

MR. SHEPHERD: So for example, this:

"Conduct comprehensive assessment of contractor control framework..."

Et cetera, et cetera, which is -- that's happening right now, right?

MS. CARMICHAEL: It is.

MR. SHEPHERD: And you are not anticipating that there is going to be savings from that?

MS. CARMICHAEL: What it is is it's an analysis of the controls that we have in place that provide the framework by which we control our contractors and our time and payment approvals.

And so at this point when we -- at this point in time I would say that we can't specifically quantify any savings that might occur. What we are intent on doing in this action is to look at where we might have gaps in our controls that need to be solidified, to ensure that there isn't the risk of overpayment.

But we -- there is no indication even in the Auditor General report that we have overpaid our contractors; it is just to mitigate any risk of that happening.

MR. SHEPHERD: Okay. So this is control mechanisms that you should have had -- the Auditor General says that you should have had, but it doesn't necessarily cost you anything by not having them?

MS. CARMICHAEL: That was their finding, that it was just a risk of potential overpayments.

MR. SHEPHERD: And you have implemented the time-tracking system for auditors at nuclear sites -- for contractors at nuclear sites, right?

MR. LAWRIE: Yes, we have.

MR. SHEPHERD: And is that saving you money, now that you know you are on top of the time?

MR. LAWRIE: No quantifiable savings, because it was, again, another control mechanism to minimize the risk of time sheet entry errors.

MR. SHEPHERD: And the next one -- and the next two bullets here appear to be the same. The new one and the old one appear to be the same, and that is -- this is about controlling individual overtime, right?

MS. CARMICHAEL: That's correct, the third bullet.

MR. SHEPHERD: And the fourth, right?

MS. CARMICHAEL: And the fourth, yes.

MR. SHEPHERD: They seem to be duplicative. The question I wanted to ask, though, is -- you say:

"Actions allowed within the current collective agreements have been implemented."

Are there some restrictions on your ability to manage overtime?

MS. CARMICHAEL: We have collective agreements that require certain payments of overtime, and so we have to abide by those collective agreements. So in that regard, by having to follow those agreements, we would have constrained in certain areas around whether we pay -- how much overtime we pay and who gets paid overtime.

MR. SHEPHERD: Can you give me an example?

MS. CARMICHAEL: There are groups in, particularly, IMS, which is our inspection maintenance services group, that have, say, different collective agreements. I am not the expert in collective agreements, but that require different shift change notices and shift scheduling. So they would be -- they would have different sort of overtime impacts for our organization.

But I do think that the compensation panel, which understands the collective agreements much better than I do, could answer that question more fairly.

MR. SHEPHERD: That's fair, but I am looking more sort of from an operational point of view. Like, for example, do you have employees within the nuclear organization that are guaranteed some level of overtime, that you have to give them certain amount of overtime?

MS. SWAMI: I am not aware of any requirement to pay a certain amount of overtime. Certainly one way we manage our business is, obviously, we don't staff to peak levels for an outage, as an example, but there is no requirement in the collective agreement that says we have to pay X amount to X individual, that I am aware of.

MR. SHEPHERD: Okay. And is there any requirement that you have to -- you know what? I will deal with it in the compensation panel. It will probably be easier.

MS. HARE: So I will just ask a question, because, Ms. Carmichael, maybe you misspoke.

You said -- I don't have it on the screen now –- that there are certain requirements that we have to pay.

MS. CARMICHAEL: I meant there are certain collective agreements that require us to, if we have an outage and that group is going on outage, that they would, they would maybe be first in line to get the overtime and we wouldn't source it out. There may be collective agreements like that for certain groups. That is what I was meaning, and I think the compensation panel could give you much more detail.

MS. HARE: That is what I wanted to clarify, because it goes to, then, Mr. Shepherd's question about: Are there certain guarantees of how much overtime?

MS. CARMICHAEL: I don't know if they're guarantees or first-in-line things. It would have to be something

that --

MS. HARE: First-in-line is not the same as guarantees.

MS. CARMICHAEL: Exactly, so --

MS. HARE: -- so I just wanted to clarify that.

MR. SHEPHERD: Could you turn to page 22 of our materials? I just have a couple of quick questions here on some things that I didn't understand, and I am going to ask you about them.

The first is on page 22; this is from the Auditor General's report. And if you have already answered the question on this -- I thought I had listened to everything but I may not have. This says at the bottom:

"We found similar instances for about 1,200 unionized staff who had received more than the maximum set out by the base salary in 2012."

A lot of those people are in nuclear, right?

MS. CARMICHAEL: There would be -- many of the many of the staff in OPG are nuclear, so yes, there probably are nuclear people.

MR. SHEPHERD: So you have had since 2002, I think -- if I understand this correctly, since 2002 you have had staff that were making more than the maximum they were allowed to make for their position; is that right?

MS. CARMICHAEL: I think this should be a question for compensation panel. I believe this is part of their area of expertise.

MR. SHEPHERD: Do you not know whether you have nuclear people that are making more than their maximum for their position?

MS. CARMICHAEL: I don't even -- sorry, but I don't understand what that question really means, because there is a base salary and then people make overtime. So I am not sure what the maximum calculation would be.

MR. SHEPHERD: Okay. So this says that when there was an implementation of a new base salary schedule in 2002, anybody who was already making more than that was -- they call it "green-circled" and allowed to stay above the maximum and continued to get wage increases. Are you familiar with that?

MS. SWAMI: So I think what we would say is this is a very complicated -- complicated process, that we would rely on our support from people and culture to advise us on this. And so I really do think they are in a better position to comment on it.

What I could say is there was a number of things being implemented by the company; there were new collective agreements, for example, things of that nature. We're just not familiar enough with the specific details to be able to answer, I think, the kinds of questions you are looking for.

MR. SHEPHERD: I am not going to ask you details about it. I am asking you the general question: Are you aware of employees in your organization, the nuclear organization, that are making more than the maximum for their position, not because of overtime -- base salary, more than their maximum -- and are still getting annual increases?

If you are not aware of anybody. if you are not aware of anything, just say so.

MS. SWAMI: I am not personally aware of anyone in that circumstance.

MR. SHEPHERD: All right, thank you. I wonder if you can turn to page 23 of 24 of the materials. This is just a quick question -- I hope it's just a quick question, on what's called the nuclear station specific results bonus.

This is from undertaking JT2.38, and so all I would like you to do is -- can you just explain what this bonus is, first?

MS. SWAMI: I am very familiar with the first line, which is the annual incentive pay; very familiar with that. I am not as familiar with the nuclear station specific results bonus allocated to management group, PWU, and Society.

I am aware that there are groups, some very specific people within our organizations, that do receive -- I will call them incentive pay for the results that are specific to their work program elements.

So it's very, very specific to a number of individuals, unlike the annual incentive pay which is more broad-brushed for management group.

MR. SHEPHERD: Well, you people reporting to you who receive the nuclear station specific results bonus, right? Or somebody on this panel has people reporting to them that receives this bonus, right?

MR. LAWRIE: I don't.

MR. SHEPHERD: You don't.

MS. CARMICHAEL: I think they would be reporting to a station; it would be very station-specific.

MR. SHEPHERD: I see.

MS. SWAMI: So these bonuses would be related to people that are actually working in the plant. They may be related to outage performance; they could be related to a particular crew's performance. So that would be someone working in the plant, and how well their crew performed against a number of targets.

So it's very, very specific and targeted.

MR. SHEPHERD: Okay, thank you. I am going to skip a whole bunch of this stuff, because obviously I am running out of time. But I do have about five or ten more minutes, if the panel will indulge me. Is that all right?

MS. HARE: That's fine.

MR. SHEPHERD: Thank you. I am looking at page 27 of our materials. This is an excerpt from the KPMG report entitled "Opportunity Analysis". In particular, this is nuclear generation, and if you look at page 27, this is the information sources that they had when they did their report, KPMG; do you see that?

MS. CARMICHAEL: Yes, we do.

MR. SHEPHERD: Okay. So I am looking down those and they did interviews with a bunch of people, right? You can see that; in fact, you are one of them.

MS. CARMICHAEL: I am. A few of us are.

MR. SHEPHERD: You both are.

MS. CARMICHAEL: Actually, three of us, I think.

MR. SHEPHERD: And the nuclear business plan 2013 to 2015, that is in the record of this proceeding, right?

MS. CARMICHAEL: That's correct.

MR. SHEPHERD: Is the business unit cost analysis -- unit cost reports, are they in the record of this proceeding?

MS. CARMICHAEL: No. Those are very detailed reports for -- each business unit has a detailed report of their budgets and costs elements, and then those can be even further broken down into departments by cost elements.

So those are many cost reports. That is the way we manage our cost information and budgeting.

MR. SHEPHERD: So this is your costing that is ultimately rolled up into a budget. It's a bunch of spreadsheets, right?

MS. CARMICHAEL: It's a bunch of reports that are at very low level, yes.

MR. SHEPHERD: Okay, all right. And payroll organizational data, obviously I know what that is. Nuclear engineering briefing note; can you tell me what that is, and do we have that in the record?

MS. CARMICHAEL: No, we don't have that in the record. This was a briefing note prepared to update on the engineering O2 program initiative that we had begun as part of our GAAP-based business planning process in 2009.

So as an update to provide information as to how we were doing with regards to that particular initiative, a briefing note was done. But that was not -- that was not submitted in evidence, because this goes back to -- further back, and it was just an update of something we had done previously.

MR. SHEPHERD: This is a briefing note to KPMG, or to management, or to the government? Who was it to?

MS. CARMICHAEL: It was briefing note that was prepared as a package for KPMG.

MR. SHEPHERD: Can we have that? Can we see that?

MS. CARMICHAEL: I could attempt to locate it, yes; I will try my best.

MR. KEIZER: I think we may have to -- it may be subject to confidentiality.

MR. MILLAR: J7.4.

UNDERTAKING NO. J7.4: To provide briefing note on engineering O2 program prepared for KPMG.

MR. SHEPHERD: And the next one is nuclear engineering fleet view tool, and the tool is actually some sort of program, right? But this is overview of the tools.

So can you tell me what this is?

MS. SWAMI: This would be a computer program that we have, what we call system health reports as an example, and all of information was essentially a manual process. So this would allow us to be a little bit more efficient --well, a lot more efficient, because we could start to use computer databases to manage that data and put it into this report -- as an example, there’s other reports -- so that the engineer could look at trends and performance of their system over time.

So it's a very specific thing that would reduce the amount of time it took for a system engineer to prepare and analyze this type of data.

MR. SHEPHERD: It's used by the engineering people to mine the data they have available to them, and find out trends and things like that. But is it also used by management to be able to drill down to what's happening?

MS. SWAMI: I don't think it would work that way. So what happens with a system health report is you would get a report out to management of what those trends are, what the engineer is seeing and recommending in terms of improvements or changes to their systems. That is done on a regular basis, where management then drills down with the engineer there to talk about the specifics of the data, and what the trend means, and how they have interpreted that information.

MR. SHEPHERD: Okay, I understand that.

MS. SWAMI: It's lot of data, I guess is what I am trying to say. It needs --

MR. SHEPHERD: You’ve convinced me I don't want to see it.

I am going to skip the business transformation plan for a second. There is a document here called "nuclear supply chain white paper". Can you tell me what that is? That's not in record here, is it?

MS. CARMICHAEL: That is not.

MR. SHEPHERD: And can you tell me what it is?

MS. CARMICHAEL: If I recall, it was a paper that was developed by the vice president of supply chain at the time. And he outlined an overview of supply chain and where the challenges were, where the opportunities lay to improve performance. And so he developed this white paper that was then provided to KPMG.

MR. SHEPHERD: And in fact, supply chain is one area in which KPMG did have some incremental recommendations, right?

MS. CARMICHAEL: I think at the back they were -- they talk about supply chain.

MR. SHEPHERD: Yes. It's probably not in here, but I think they did. Anyway, so can we see that?

MS. CARMICHAEL: I would have to see if I can find that. The person who prepared it is not with us anymore, but I will do my best efforts to find that document, subject to confidential information.

MR. MILLAR: J7.5.

UNDERTAKING NO. J7.5: TO provide document entitled "nuclear supply chain white paper"

MR. SHEPHERD: And then the last one on this page, before we get back to the business transformation plan, is "Nuclear costs improvement trends." So that's an analysis, an internal analysis of your costs and trends, is that right?

MS. CARMICHAEL: It was also briefing paper put together and it basically had a lot of the total generating cost information that is included in all our benchmark reports, our production trends, to basically show how we are trending and what are the impacts. And that's actually one of the areas where we highlight escalation of industry and non -- and so it was just a bit of an explanation of how it all worked.

MR. SHEPHERD: It sounds like you are very familiar with that; did you prepare that?

MS. CARMICHAEL: I actually did.

MR. SHEPHERD: So can we have that one?

MS. CARMICHAEL: I can provide that.

MR. MILLAR: J7.6.

UNDERTAKING NO. J7.6: TO provide document entitled "nuclear costs improvement trends"

MR. SHEPHERD: And then the last thing is the business transformation plan. I am not going to ask you questions about the business transformation, but is this -- do you know whether this document that's referred to here is the PowerPoint we have already seen in the evidence, or something else? Do you know?

MS. CARMICHAEL: I am not sure which document was provided at that time. It may -- there may be timing differences. There were many presentations done on business transformation.

MR. SHEPHERD: Okay. Thank you. And now I just want to go to my last area, which is a follow-up to the questions Mr. Poch asked you. And I just want to see if I understand these correctly.

He was asking you about Pickering continued operations and how it relates to surplus base load generation, right? And so I have just a few questions about that.

The first is: I am right, am I not, that in the normal course, if you are generating too much as an organization, what you would want to do is turn off the stuff that's the most expensive? Right? Generally speaking, that makes sense, right?

MS. SWAMI: If we were generating too much, the integrated –- or the Independent Electricity System Operator would make choices on what was to be done on the system.

MR. SHEPHERD: Understood. But the logical thing to do is to get rid of the expensive stuff, right?

MS. SWAMI: I believe that is how they do it.

MR. SHEPHERD: By the way, I think you're allowed to say "IESO."

MS. SWAMI: Oh, am I?

MR. SHEPHERD: I think so.

But what actually happens when your -- is your nuclear stations can't be switched on and off. They have to be manoeuvred over a course of -- what is it -- 48 hours to turn them on and off?

MS. SWAMI: If they were shut down, yes, it would take some period of time to shut down, it would take some time to bring them back. If we were manoeuvred, which -- OPG does not go through manoeuvring, but I think you may have heard that term, that would be adjusting the amount of output from a particular unit. So that is different. That's --

MR. SHEPHERD: That can only be done with a pressurized water reactor; is that right?

MS. SWAMI: That's not true.

MR. SHEPHERD: Oh, no? Okay. Your units could do that?

MS. SWAMI: We don't manoeuvre our plants, but there are other generators in the province that can be manoeuvred.

MR. SHEPHERD: Your units are capable of being manoeuvred?

MS. SWAMI: It -- I -- in an emergency situation, true, but on an ongoing basis that is not how it's managed.

MR. SHEPHERD: I know you don't. I am asking whether you could, technically you could.

MS. HARE: You know what, Mr. Shepherd? I don't actually understand the significance of the question. Maybe you could explain it. You are asking about the units being capable of being manoeuvred and they are thinking about it, but why is this relevant?

MR. SHEPHERD: Because I am going to ask about –- Mr. Poch is making the argument that Pickering continued operations is losing a whole bunch of money. I am going to ask whether there are other ways of handling that so that Pickering continued operations doesn't produce -- drive the sort of surplus base load generation that Mr. Poch is talking about, and what the impacts of that are.

MS. SWAMI: So Pickering cannot be manoeuvred.

MR. SHEPHERD: Oh, it can't be? Well, that makes it simple, then.

So you can, however, turn it on and off, right? So --

MS. SWAMI: You can shut it down and restart it.

MR. SHEPHERD: And because Pickering is set up to be -- to run a certain number of hours, if you turn it off -- let's say -- this is a hypothetical. Let's say you said: We are going to have, in the shoulder period, we are going to have way too much base load, and so we are not going to run Pickering from April to June, let's say. I don't know. It is just a hypothetical. And so you shut it down and you ramp it back up in June. That's technically feasible, right?

MS. SWAMI: If there is a planned outage, that is exactly what we would do. We would take a planned outage. That is --

MR. SHEPHERD: Okay. And you could do it because you don't need the power, right?

MS. SWAMI: In fact, when outages are planned for -- you know, over a period of time, in fact that is how the system is planned. They look for the periods of time so you can mitigate that surplus energy on the system by scheduling outages appropriately.

MR. SHEPHERD: Perfect. And when you do that, the time that it's not operating, is that added to its life, in effect, because you are not generating during those hours? You don't have generating hours?

MS. SWAMI: That's correct.

MR. SHEPHERD: Okay. So then the effect of turning it on and off like that, if you were able to only run Pickering, let's say, in July and August each year, because that is all you needed it, is that instead of having to shut it down in 2020, it might be 2025, right?

MS. SWAMI: So I can't speculate on that, but I would say that if Pickering continued to operate until, let's say, 2025, we would have to do a vacuum building outage in 2020, because that is required and it is irrelevant to the length of time that a unit operates.

I would also like to go back to the idea that we could shut down for a period of -- I don't know -- ten months out of a 12-month period. That would be extremely difficult, because during that period of time you are still doing all of the maintenance, you are still managing the system. Right? The costs are still all being -- are there. We can't get rid of those costs.

And in fact, in a long outage like that, there is additional costs, because there is additional work to make sure that that equipment is maintained at a certain state so that it's ready to start up.

And for that short period of time, that would be an extreme expense that, really, you know, is impractical.

MR. SHEPHERD: I understand. And that is exactly where I was going, is to identify what do you save if you do that. And tell me whether this is correct. If you were to shut it off for any period of time, you would save two things.

First of all, you save the fuel, because you are not using incremental fuel, right?

MS. SWAMI: Correct.

MR. SHEPHERD: And the second thing you would save is by extending the life, you then move off the asset retirement costs and fuel handling costs, which means their net present value is lower. So that would reduce your present costs, right?

MS. SWAMI: True.

MR. SHEPHERD: Okay. But other than that --

MS. SWAMI: It would change the life of the plant. So there would be a number of changes, yes.

MR. SHEPHERD: Sure, but other than that, you still have to have the people there? You can't just not have any people there?

MS. SWAMI: That's correct.

MR. SHEPHERD: And you still have to keep it maintained and all that sort of stuff. So you don't save all your costs, you just save some?

MS. SWAMI: And Ms. Carmichael, I am sure, can speak to this much better than I can, but if we look back to the OM&A costs that Ms. Carmichael was talking about earlier, including, presumably, the outage costs, all of those costs would be maintained.

MR. SHEPHERD: Thank you. Madam Chair, I appreciate your indulgence and those are all of our questions.

MS. HARE: Thank you. The Panel does have some questions. Mr. Millar, do you have anything? No?

MR. MILLAR: No. We already went.

MS. HARE: Board Member Long?

Mr. Keizer, did you have something to say?

MR. KEIZER: No, sorry. I just had indicated we do have a copy of that undertaking, and we can ask the witnesses to have a look at it before you wrap up for lunch, if you'd like. And then we could resolve that undertaking while Mr. Shepherd is here as well.

MS. HARE: Sure.

MS. LONG: I think the way that we will proceed is I will start, and then Ms. Duff will ask her questions and then Ms. Hare.

# Questions by the Board:

I just have a few questions, and I would like to go back to a discussion that Mr. Crocker had with you with respect to skill sets needed when you do an outage. And specifically I am interested in knowing, with respect to this outage that we are talking about, the station containment outage and the vacuum building outage, what percentage of your existing employees are going to be working on that.

And I guess if I look at 100 percent of the labour on that, is it going to be existing employees? Or are you going to have to contract and get specialized help to do those?

And you can break it down as per outage, but I am just trying to get a general sense.

MS. SWAMI: And off the top of my head, I don't have the -- I don't have that breakdown, but I can certainly find that out. I know that it exists. I just don't have it off the top.

MS. LONG: I am just trying to understand if it's 50/50, if it's 80/20, what...

MS. SWAMI: A significant amount of the work is done by contract staff during those outages, those large outages. And in fact, in all of our outages we balance the resources, so we assign our own resources to participate, we use overtime to cover some of the work, we look at augmented staff, but then we bring in contractors. And during these large, large outages, because there is obviously a lot more work, we would bring in a large number of contractors to do the work.

MS. LONG: And is it an issue of, I guess, hours needed? Or is it that you don't have the specialty in-house to be able to do the work, that requires you to get contractors?

MS. SWAMI: I would say it's a combination of both. I think Mr. Lawrie could probably describe a lot more clearly the difference between the work.

MR. LAWRIE: The work in -- let's say, for example, we are looking at the vacuum building itself, in terms of depoising the vacuum building, so that it no longer has a vacuum and it can be opened up and go in to inspect. That's a very, very large building and a lot of resources need to get into that building.

So we actually have to erect a construction elevator, if you like. So these not something our staff would normally be involved in, building elevators, so that we could efficiently move the staff to the top of the building during the outage.

So those are the type of activities that are underway. We also, when we shut down for a four-unit outage, we are going to be taking some of the special safety systems out of service, and we will actually have to install temporary systems to make up for those systems. So there is a fair amount of heavy piping, new pumps and power supplies.

That's a lot of heavy lifting, so to speak, that's typically the forte of the building trades union. And so we will work with our unions to get to what we call a purchase service agreement, to allow us to hire-in contract staff that have the skills and supervisory team that's experienced in installing these large piping systems and pumping systems.

MS. LONG: So could we have an undertaking on the vacuum building outage, the percentage of work that you expect will be external -- so I mean contractors, not current OPG employees.

You must have done some sort of assessment when you cost this out.

MR. LAWRIE: Yes, we have information on how much we refer to as purchased services in the budget. So in terms of the dollar amount, would that be acceptable?

MS. LONG: That's fine.

MR. LAWRIE: Dollar amount regular staff, dollar amount purchased service for the vacuum building outage.

MS. LONG: Yes.

MR. MILLAR: J7.7.

UNDERTAKING NO. J7.7: WITH REFERENCE TO VACUUM BUILDING OUTAGE, TO ADVISE THE PERCENTAGE OF WORK TO BE PERFORMED BY CONTRACTORS VERSUS REGULAR STAFF; DOLLAR AMOUNT STAFF, DOLLAR AMOUNT PURCHASED SERVICE.

MS. LONG: And then I am assuming for more of the lifecycle, more common, if we can call them that, outages more of those would be staffed from the OPG complement of current employees, is that correct?

MS. SWAMI: In every outage, actually, we do have a certain amount of contract work, just as Mr. Lawrie described. The difference is the volume of work.

And so a lot of our resources do go to perform some of that work, but we still bring in contractors. So under the same vein, we could provide that type of breakdown, if that would be helpful, for a single unit outage.

MS. LONG: That would be helpful, thank you.

MR. MILLAR: J7.9 (sic).

UNDERTAKING NO. J7.8: FOR A SINGLE UNIT OUTAGE, TO BREAK DOWN INTERNAL VERSUS EXTERNAL STAFFING COMPLEMENT

MS. LONG: And just a further question on that. You talked a little bit – well, actually you talked a lot with Mr. Shepherd about the timing of this station containment outage, and the extra work that's going to be done in this outage.

I would like to better understand -- I understand that you are doing the -- I am going the call it the extra work, because it's an expeditious time to do it. But is there a safety or regulatory reason that it needs to be done within the test period?

MS. SWAMI: So if I use the example of the emergency water system piping, that's a system that must be available when we are operating.

Inspections have shown that there is piping wall thinning, so the pipe is getting worn, if you will, and it's embedded in the ground.

We need to replace that to ensure that there is no complete breakdown of the piping system, so we need to have that done. So whether we do it, you know, in 2015, or could be done in 2016, it needs to be done so that we can ensure that safety system is operational.

So that's why we are scheduling it at the same time as a four-unit outage, because I think I explained earlier that during a four-unit outage is the optimum time to do that.

If we didn't do it then, we would be proposing to do another four-unit outage shortly thereafter, which it just doesn't make economic sense to do that.

The next opportunity would have been 2021, if you will.

MS. LONG: But from a safety perspective, it's not imminent that it needs to be done. But OPG's position is that it makes sense to do it when we’ve got the units down?

MS. SWAMI: Two aspects; it's not an imminent safety threat, but it is still something that is important to ensure that we have safe operation going forward.

So it's not imminent, but it's certainly something we need to fix, and it makes the most sense to do that when you are already in a four-unit station.

MS. LONG: Thank you. I did have a question with respect to an undertaking response, but it is in School Energy Coalition's compendium for panel 1. So I don't know if you have that in front of you.

I don't know that you need it, but if you have it There, it might be helpful for you to take a look at it. It's JT2.19, where you were asked to provide a list of OPG employees that were currently employed and making over $200,000.

MS. SWAMI: Yes, I have that.

MS. LONG: You have that? As I look at the, I guess the bottom two-thirds of this page -- you had a bit of a discussion today about overtime expenses, and as I look at this list, it appears to me that overtime might be an issue with respect to some workers in the nuclear group.

And I am wondering at what point do you take a look. Do you take a look at this list and say are we staffing things properly, have we got overtime under control? Who takes a look at that, and when do you do that?

Do you do that yearly? Is there a review? Because this looks to me like there is an issue.

MS. CARMICHAEL: We have -- we do overtime reporting on a monthly basis, and we do it by individual, and we do have a set limit that anyone could have in overtime. In fact, there is a rule that you are not allowed to go over a certain limit.

So we do monitor that all the time, and challenge why that person may need overtime. There are specialized groups that they are the only people that can do the work, and the work is done on critical path of an outage. So there are special exceptions made for those overtime costs.

But we do monitor it on a monthly basis and we do -- we do have to get certain levels of approval to allow individuals to work overtime.

MS. LONG: I guess I want to understand the process. So, Ms. Carmichael, does finance take a look at this and alert nuclear services and say, hey, maybe we have a mismatch in services, maybe we don't have enough people here?

Like, who is doing the assessment? As you try and look at getting OM&A costs down, is someone turning their mind to, you know, maybe we have a mismatch here, maybe we are not staffing properly, maybe there is an issue.

MS. SWAMI: So from a -- I will call it a line perspective, if you will, as opposed to a finance perspective.

So I receive these reports, and my management team also receives the reports on an individual basis of who is making what overtime, whether we are meeting those targets or not. Our biggest component of this, of course, is during outages. My staff includes the radiation protection staff that we will hire on a temporary basis to come in and support an outage.

We look very closely at all of the elements of their pay, including any scheduled overtime that they would be required to participate in. So we are monitoring this on a regular basis.

So my director responsible for radiation safety would look at this on a weekly basis, to see how well we are performing against our overall overtime performance, to ensure that we are not exceeding any limits.

But he would also be responsible to look, on a monthly basis, at the individuals and if those individuals were actually exceeding a pre-approved amount or not. If there was a need to bring in additional resources because, you know, there was work that needed to be done, he would have to obtain my approval to allow someone to exceed a certain level which is below the finance level, so I have my own internal control process.

And then he would come to me, and if it went above the finance control level, I would have to seek approval from the chief nuclear officer. And that -- you know, my personal management style is I don't go to my boss to ask for that; I manage it within my own house.

So I would look at my staffing level and say, well, maybe we should have hired two hundred 200 RP techs, or radiation protection technicians for this particular outage, instead of a hundred and fifty.

So we do that on a regular basis as we look into the plan for the outage, and then backwards on how we did during that particular outage.

MS. CARMICHAEL: May I just add something to that? We did have an interrogatory that sort of almost asked similar questions in terms of cost benefit analysis, and we did do that on our inspection maintenance services group because that is where much of our overtime occurs, particularly in the outage world.

So we did file this IMS cost benefit; it's SEC 119, issue 6.8. I believe it is a confidential document, so I am just going to refer to it. But it does go through the analysis of: Should we add a different an extra shift to reduce overtime? What's the impact on our outage days? And things like that.

So we do look at it from a cost-benefit analysis, what resourcing types we are using in individual areas. So each manager or group lead would look at an area, but there is also work done on top of that as well.

MS. LONG: Okay. Thank you.

My final question is to you, Ms. Carmichael. We had a discussion earlier today and I think maybe even the day before, about the $61 million that you talked to Mr. Stephenson about, with respect to, I guess, the benchmarking overage that was cited. And I think the number was 300 and -- I think 394 or something to that effect. And you said that you thought the savings would be $61 million.

I guess I'm wondering how you came up with that number. Or maybe I am wrong.

MS. CARMICHAEL: Sorry. Yeah, no, I'm sorry. There was a brief discussion back and forth about the 60 million and what the numbers -- they were reduced. I think it was Mr. Shepherd.

But it was -- 60 million was the calculation of the over-benchmark -- or the total benchmark variances. So that -- and I believe the number was 400 and something because it was based on the first report.

And then that calculated to 60 million, and then I believe the question was that number would be reduced by a certain amount because you aren't over-benchmarked by 400 and something. It's really 396.

And he did a brief calculation; I think it was 5 million. And we said: Yeah, it's probably around that.

So that's 60 million minus the 5, was the adjustment for the incorrect calculation of the benchmark.

MS. LONG: Okay. So if I go to School Energy Coalition's panel 4 compendium and I look at page 18 -- and Mr. Shepherd took you to this -- the first box, the fourth bullet, where it says:

"Reduced headcount by a further 830 for a total reduction of 2,300 and $1 billion in savings by 2016."

I guess I am wondering, you know, if 2,330 employees saves you $1 billion, how almost 400 employees is a savings of 61 million. It seems like too small a number.

So I am wondering how you calculated the 61 million. Did you take what you thought the average nuclear employee would be and multiply it by 394? Is that what you did?

MS. CARMICHAEL: What we did is we took all the calculations, the overages and the underages, we took them all; we didn't talk just about just what we were reducing.

But we have savings in certain areas and extra costs in other areas, and the net was $60 million. And what we did was we looked at whether they were a management group, whether they were PW Union or Society, and we looked at -- we tried to -- like I was explaining, it's hard, because we have an organizational structure with job categories, but then functional area comparisons are aren't easily aligned to our org structure.

But what we did was our best attempt to say this functional group is mainly done by, say, PWU, so then we know that most of that work is done by a certain job classification and we know the standard labour rate, which we use for our budgeting and actual purposes, which is the fully burdened rate and cost of the employee.

And we did the calculation based on that.

MS. LONG: So that is standard labour rate, I think you said. It's salary, it's benefits and it's current pension obligations?

MS. CARMICHAEL: Yes. And benefits, yes.

MS. LONG: Okay.

MS. HARE: Thank you. Ms. Duff?

MS. DUFF: Hi. I have a few questions, hopefully getting people out by one o'clock.

I wanted to talk to Ms. Carmichael a moment about the regulatory books, your revenue requirement calculation that goes into this filing or a filing like this.

Does your group put that together from -- total from the revenue right through to the expenses and that calculation overall for nuclear?

MS. CARMICHAEL: No, my group doesn't do that. We are responsible for the budgeting and finance for the nuclear -- essentially the nuclear OM&A components and capital components.

So if I take you to the table -- I will take you to the table, actually. It's F2, tab 1, schedule 1. Our areas mainly are up to about line -- I would say line 4 and line 5, and even line 6.

So we look after the OM&A of the nuclear operation, the budgeting, the challenging back and forth of the portfolio, the cost. But when it comes to the rate revenue calculation, there is a lot of calculations that go in there, and that is done by our central finance organization, which I report in to.

MS. DUFF: So the fact that this -- 2014 being a forward test year as far as the application, and we are already in June -- so we have five months of actual and seven months of forecast -- how does that affect any of your OM&A decisions? Does it at all? That right now we are still under current rates that have been in place since the last proceeding?

MS. CARMICHAEL: Well, we continuously look at where we can reduce costs. So all year long, we are looking at how we can reduce costs through headcount, through savings on spending, on materials, bringing in extra resources, making sure we are using the right resource for the right thing, the most efficient and cost-effective resource. So all year long we are doing that.

Particularly being finance, each group and nuclear has a finance group that helps them drive that improvement in those cost areas.

So we are constantly looking at -- we don't just say: Well, we have this budget so we are going to spend that much. We're constantly trying to improve upon that.

MS. DUFF: Because you are in the corporate finance department, I was just wondering, under current rates, the nuclear business in particular is 1.5 billion; you're looking at a deficiency of that. Does that provide any kind of lens? Or are you provided any direction, saying until this Board makes a decision with respect to the rates of 2014 and '15, that there is some risk to the nuclear division?

MS. CARMICHAEL: Absolutely. We know there is a risk, and so we are constantly -- irregardless of whether we would be waiting for the decision or not, we are still striving to over-perform in our -- and I mean save money in our OM&A buckets.

And so we are endeavouring to do that every day and every month, and we do know that there is a risk. And so we are managing to that and striving to reduce our costs.

MS. DUFF: And the decision to stay out in 2013 and not apply for a rate increase in 2013 and to date, that's not providing any kind of liquidity constraints for you? I mean, the business is still managing? You are still paying your bills?

MS. CARMICHAEL: We are still paying our bills.

MS. DUFF: What happens at the corporate -– pardon me. I'm sorry.

MS. CARMICHAEL: We are still paying our bills.

MS. DUFF: Sorry. I apologize. But is there any -- I mean, from a treasury or a liquidity perspective, what are some of the constraints that you are facing? Or have you had any discussion with your peers?

MS. CARMICHAEL: I would suggest maybe the finance panel would be better to advise on that issue, because I am not fully aware of what those issues are on the treasury or liquidity of our financials.

So I would prefer it if you would ask them about that.

MS. DUFF: That's fair enough. I want to turn a moment to the benchmarking information. And I -- there is two types of benchmarks that we have before us in the evidence. There is the Scott Madden benchmarking, which I understand you are -- it is your group that is maintaining this from 2009 to' 14; is that correct, Ms. Carmichael?

MS. CARMICHAEL: I was -- it was under my group when we began the Scott Madden benchmarking process, so in 2009. It did transfer to Ms. Swami's group under business transformation, because it is very operational in terms of benchmarking, in 2012. So the last one we filed was prepared by Ms. Swami's group, but the previous ones were by our group.

MS. DUFF: So the source of the data internally is your own, and that of your peers or the other people that you are benchmarking, how do you get that data? Is that through this EUCG?

MS. CARMICHAEL: So there's different panels for various metrics. So most of our operational metrics are -- such as forced loss rates --

MS. DUFF: In particular I am thinking about the value for money, the total generating costs, if we could focus on that.

MS. CARMICHAEL: Sure. The value for money ones are from EUCG, so that is where we get our information from. We are members of the EUCG, so we have access to that information. And we enter our information so that we are part of that database.

MS. DUFF: And with the corporate changes from 2009 to present day, everything, and including business transformation, cost lines are changing, FTE are going from your own business unit up to a corporate level, how is that -- I would just think over time the reasonableness of looking at the comparator from 2014, as you are providing inputs and reporting into the model, there must be some level of subjectivity regarding how to keep it comparative from one year to the next.

MS. CARMICHAEL: So in the EUCG database, they do request cost categories. And one of the cost categories is what are your corporate support costs, and so we enter those and compare our corporate costs to their corporate cost.

Even though our corporate cost allocations to nuclear have increased through business transformation, they are still included in the benchmark and our calculation. They haven't been excluded.

Because of the way the EUCG database is, it isn't per organization, it's per sort of functional support required by any mechanism, not just line organization.

MS. DUFF: And your peers are doing the same, the ones that you are benchmarking against are the same. The data is there?

MS. CARMICHAEL: The data is there, and it's consistent.

The EUCG group also has an audit committee that ensures that there is consistency. So they would go and challenge a utility and say, okay, you have entered this as your corporate cost, or do these include blank, blank, blank? And then they – it ensures that we are comparing apples to apples.

MS. DUFF: There was that outstanding undertaking, it was 5.3 regarding: were all central or corporate costs included in that total generation cost. Do you remember that undertaking?

Now, the reason you couldn't answer that question is because you are looking into how the definition by the EUCG -- and it is an acronym, I think.

MS. CARMICHAEL: What I was challenged with was the fact that we have -- we have benchmarking data for total generating costs, which is derived from the EUCG database, and it's on a rolling basis.

MS. DUFF: Do you have full time people that this is what they do?

MS. CARMICHAEL: Well, we have a group of business planning, a business planning group, and they look at benchmarking and target setting, and GAA{-based business planning and the whole process, so ---

MS. DUFF: I would think they would be in the best position -- they are working with the data all the time.

And with this – through the proceeding, we also heard there are some shortcomings of apples-to-apples comparison with the Scott Madden to have that.

Given the people that are closest to the data, in particular, are you comfortable and confident that 2009 is an appropriate comparator to 2010?

You mentioned that you brought in these three-year rolling, and I am just trying to -- how much emphasis and reliance can the Board place on that that those years really are comparator, comparing not only to yourself but also to your peers?

MS. CARMICHAEL: So the rolling benchmarks have always been there. So right from the beginning, we have always done rolling benchmarks. The first report in 2009 showed rolling benchmarks for 2006, '07 and '08, and then we kept rolling them forward. So that's been a consistent application.

The benchmark numbers are rolling, and they include -- they don't include certain elements of our pension costs, because other groups don’t have them and it was decided by Scott Madden, when they did the analysis, what would be the appropriate apples to apples.

So they calculated a total generating cost element there, and we have consistently applied that.

When we set targets, however, because targets are based on standard labour rates and we want people, when they are being measured on a monthly basis, to basically be aligned to the reports they get, which includes pension costs. We set the targets to include those, and so there is a little bit of a disconnect because we want to benchmark apples to apples. But when we have targets, we want to ensure that people are being measured against the reports that they are getting.

So that’s why there is a little bit of a disconnect. So there is targets and -- so that is why when the question was asked are we consistently applying it, we are consistently applying it. But the targets that we set have to be measurable against some kind of a report, and that is what we were trying to do.

MS. DUFF: Maybe be this question is best put to Ms. Swami, but given it's been a while since 2009, what is your recommendation about updating this -- to get Scott Madden back in and update this information? Or are you just doing fine managing this on your own, as an industry going forward?

MS. SWAMI: So I will make a couple of comments. The first one is that there is a process that we use where we would prepare it, and then have an independent person verify.

So it is not that we send off one person to gather all this information, put a report together, and that's the end of it. We do go through a process where people in my organization would prepare that report. But we also ask Ms. Carmichael's organization to look at this information, to make sure that we are really judging it correctly. That is part of it.

The second part that I would refer to is on an ongoing basis, it may be helpful to have someone come in who is independent from OPG to have a look at some of the work that we are doing, just to confirm that we are still on track with the process.

We believe we are still meeting that process. I don't think there is any – you know, we don't think we are not. But in our work in nuclear, we are very open to having people come in and look at us, and tell us where we can make improvements.

MS. DUFF: The other benchmarking study is the Goodnight, which is based on the FTE comparisons. And there was the discussion with CME yesterday about the staff that are excluded; I think it was around 3100.

Based on your fully allocated FTE, that's about -- in my calculation, about thirty-six percent of the staff of your FTE allocated to the nuclear business are not part of that Goodnight study in which comparison is made; is that fair?

MS. CARMICHAEL: So, yeah, the difference between the rate revenue requirement FTEs and the actual FTEs that Goodnight did benchmark was about thirty-one hundred. Many of those were corporate non-direct support people that Goodnight does not benchmark. And those are benchmarked and reviewed by the corporate groups. They are always driving towards efficiencies and performance improvement. I think there’s a couple of benchmarking reports that talk about performance indicators for them. So they are kind of handling that area.

And then there is a bunch of other things that we had to exclude, like the refurbishment group, the safe storage project, and there was a couple of those things.

MS. DUFF: I appreciate there are differences in your business -- the corporation and the way you do your business.

But to the extent that over thirty percent of the employees are excluded from that, and we are setting rates based on full FTE-allocated, what conclusions can the Board draw when it only looks at the Goodnight?

Is that going to just make a conclusion about thirty-five percent -- I mean sixty-five percent of your work force, and for the other thirty-five, we don't have a benchmark?

MS. CARMICHAEL: Well, the Goodnight conclusion was that they did review our business plan as well, and they did note that we were on the right track to meeting the benchmarks that in those groups that they could benchmark.

MS. DUFF: Yes.

MS. CARMICHAEL: The other areas are specific to CANDU operations. We are challenged to find a benchmark, or a relevant benchmark to be used against for those numbers. But we do constantly look at how we can work more efficiently.

We have working groups in the industry, particularly outage programs, to ensure that we are doing or becoming more efficient in those areas.

MS. DUFF: But in terms of your responsibility, that really is outside of your responsibility, those allocated FTEs? Did I hear you correctly?

MS. CARMICHAEL: Well, I would say that they are -- it's my responsibility to challenge anything that's allocated to the nuclear business.

MR. DUFFY: On that, it was the business transformation -- I was getting a little confused, I’ll be honest, when Mr. Shepherd was questioning on business transformation.

What is and what isn't within your control, or you are responsible for in meeting the targets that have been establish for the nuclear business within business transformation?

MS. CARMICHAEL: Within business transformation? So we are constantly being allocated support group funds to – support group allocations to our nuclear portfolio, and my role is to investigate what those costs are and to ensure that we are -- the nuclear group is getting value for money from those groups, and that those costs are appropriate.

We have done -- it was part of the study on the allocation methodology, to ensure that nuclear was getting not more than it needed, or not less, and it was a fair allocation.

MR. DUFFY: Do you have an FTE target and a dollar target that you have to work against in your reporting against that?

I mean, those are the simple factors; I understand all the other work that is going into it. But do you have an established FTE target and dollar target that you are responsible for?

MS. CARMICHAEL: We have an established OM&A target, as part of our reports and our annual incentive plan. So we are held to that -- we drive that, right. I mean, I am accountable to ensure that the nuclear organization meets its budget, and that includes anything that is being charged the to the nuclear organization.

MR. DUFFY: But the business transformation reporting -- maybe I am being too narrow in the way I’m asking my question. I am thinking of that as a discrete initiative that you are doing, with an FTE and a dollar target associated with that. And you are either going to be above it and you are going to be below it, when the time period is over.

Are you the person, or is someone in your team or group responsible? Do you report on that basis or did the nuclear business meet its target for business transformation in the time allotted?

MS. SWAMI: So from a business transformation perspective, a plan for nuclear was developed with specific targets for reduction. I think that over the last number of years, we have been implementing those improvements. We have targets that are in our business plan, and so we don't then go to -- so if I look at N1-1-1, attachment 5, page 4, and I look at nuclear engineering as an example, they had initiatives to make themselves more efficient. They were given headcount targets to drive those efficiencies. If -- and then completed that work. So it has now been incorporated into the business plan targets, as opposed to we have a separate target here and a separate target there. We manage it on sort of an organizational basis, and I think that's -– that, I think, is the difference that you are talking about here.

MS. DUFF: Two questions. They are relatively short. One was -- well, I hope they are.

One was I -- before the break -- I think it was yesterday, I was asking you questions about ceasing operations at Pickering, and how can manage, use the next six years in which to manage those costs effectively. You talked about the physical assets, you talked about the bidding, you have the nuclear liabilities, the accretion rate, things that you could do.

What about the labour component? Is this a question that I should be asking the next panel? Like, how can you actively manage that? I mean, you are operating and then you are not operating, so I assume you need people right up until the end, and then you are not going to need as many people. And who is managing that aspect? Because the bottom line is, from a rates perspective and a rates recovery perspective, we are interested in stable rates that are not volatile. And we don't like, you know, surprises.

MS. SWAMI: And I understand the stability, but for Pickering operations we are not in a stable state, if you will.

MS. DUFF: Fair enough.

MS. SWAMI: However, as we go into the outer years of operation, we have actually put a -- I would call it a -- thinking together about how we would go about managing that. So we would look at other initiatives that the company might be interested in.

For instance, the refurbishment project, we talked a little bit about that earlier, that there is work that could be addressed. We look at what is the actual work we would need to do. So there is a certain amount, if you look at some of our plans out into the later -- the later parts of our years, the number of outages may change. They may change in duration and number, depending on the unit, when you get out to the outer years.

And so that could be a driver to our staffing levels.

We look at how we would manage the resource level, so we have talked a lot about the attrition rates within nuclear. And, you know, as much as I would like to be a lot younger, our -- we do have an aging work force and so that will take care of some of the -- what we are seeing as sort of employment levels. As we get into the outer years at Pickering, the number of capital projects may change.

MS. DUFF: Do you see that as being a nuclear service initiative that you are going to be involved with or leading?

MS. SWAMI: Right now, I am part of an -- a sub-team, if you will, to look at the various aspects of that.

MS. DUFF: Okay.

MS. CARMICHAEL: I would also like to just add that there is a nuclear element to that, but there is also corporate groups that -- we are also part of this team. I am on this team as well. We are looking at corporate groups as well, because as we move out and Pickering does shut down, there is only Darlington nuclear. So we are also looking at it from a corporate-wide perspective, what we would do so that we don't have this issue for the ratepayers in the future.

MS. DUFF: I just had one final, quick question. It's regarding outages. And it was something in -- you don't have to turn it up. It's allowance for outages -- or you can if you want. For risks that can result in the extension of outages.

So in addition to your forecast for outage days and the associated production lost and cost of that, is there some kind of contingency that's also built into that? Is that how I am to read that?

MS. SWAMI: So I would say a contingency, we call it an allowance in recognition, and it's built into our production forecast.

MS. DUFF: Because in the first impact statement, it –- you were -- there was an increase in that?

MS. SWAMI: Correct.

MS. DUFF: There was an increase of 0.3 terawatt-hours in Pickering and 0.49 in Darlington, but what was -- but I couldn't find when I went back to the original part of the evidence in E1, what -- could you provide for me what is the allowance or contingency that you have baked in and included in the revenue requirement associated with the outages for those two stations?

MS. SWAMI: So I can't give you the specifics of it, but I can generally say it's in the range of 10 to 15 percent. It's in that range. I don't have the specific numbers here in front of me. I can get that.

MS. DUFF: I would like to see the terawatt-hours now in the second impact statement, of what you have put aside as an allowance. And I assume you set up that allowance for corporate perspective or corporate reporting or accounting?

MS. CARMICHAEL: It's included in our production forecast, so it's included in what we would have in terms of a production plan. And that is monitored and --

MS. DUFF: But do you set up the expense and then draw against it as you have it? I am trying to understand what this is.

MS. CARMICHAEL: Okay. So it's actually a reserve or an allowance for extra days. We don't actually budget for -- we don't actually add outage costs for these extra days.

MS. DUFF: So they are not part of the revenue?

Thank you. Those are all my questions.

MS. HARE: Thank you. Mr. Keizer, you were going to explain, I think, something that Mr. Shepherd was asking before?

I just want to say one thing, though, before. I implied that, Mr. Shepherd, you went over time and in fact you didn't. And so I am sorry for implying that, so you didn't have to thank us for our indulgence because you, in fact, were under time.

So Mr. Keizer?

MR. KEIZER: That related to an undertaking that Mr. Shepherd asked, and particularly a breakdown related to management and nuclear.

And I have been advised by OPG staff that we are able to comply with that undertaking. So we can look for -- we are done, effectively. And I have no redirect.

MS. HARE: No redirect?

Okay. Thank you very much, panel. So you are now excused.

And we will take lunch break until 2:15. And you will then have your next panel ready, Mr. Keizer?

MR. KEIZER: They are idling as we speak, ready to go.

MS. HARE: Thank you.

### --- Luncheon recess taken at 1:15 p.m.

### --- On resuming at 2:19 p.m.

MS. HARE: Please be seated.

MS. HARE: Crawford, you are back.

MR. SMITH: I am. Happy to be back.

MS. HARE: And Mr. Rubenstein, too. I shouldn't leave you out.

MR. RUBENSTEIN: I am keeping my eye on him.

MR. SMITH: We are joined at the hip, him and I.

MS. HARE: Any preliminary matters?

# Preliminary Matters:

MR. SMITH: There is one preliminary matter I would ask, or raise for the Board's consideration.

Mr. Fitzsimmons has a daughter who is graduating from Grade 8, and it's scheduled for today. And in order to make it, we would have to wrap up at four o'clock today.

I am simply asking the Board's consideration if that is possible.

MS. HARE: It is a hardship, given it's a Friday and a beautiful day. But sounds good to us. Okay, so let's move.

MR. MILLAR: Madam Chair, I apologize. Michael Millar here, and there was one preliminary matter I want to raise very quickly. I had made an error in the enumeration of one of the undertaking responses, and I just wanted to correct that.

I had identified what is in fact J7.8 as J7.9. So it should be marked properly as J7.8.

MS. HARE: Okay, thank you. Mr. Smith, if you can introduce your panel, please?

MR. SMITH: I will, thank you very much, members of the Board. This is OPG's fifth panel, the corporate groups and compensation panel.

We have, closest to me, Ms. Lubna Ladak, director, controllership. Beside her is Mr. Jason Fitzsimmons, vice president health and safety, labour and employee relations. Ali Earl is to his left, director of human resources. And then at the far end we have Dr. Richard Chaykowski of Queen's University school of policy studies and the faculty of law.

I would ask that they be affirmed by the Board.

MS. HARE: Thank you.

# ONTARIO POWER GENERATION - PANEL 5

**Lubna Ladak, Affirmed**

**Jason Fitzsimmons, Affirmed**

**Ali Earle, Affirmed**

**Richard Chaykowski, Affirmed**

# Examination-In-Chief by Mr. Smith:

MR. SMITH: Very briefly, then, Ms. Ladak, I understand that you are a director of controllership for OPG?

MS. LADAK: That's correct.

MR. SMITH: And in that role, you have responsibility For, among other things, maintaining and operating the corporate cost allocation model for planning and reporting?

MS. LADAK: That's right.

MR. SMITH: I understand that you are a chartered accountant, and a member of the Institute of Chartered Accountants of Ontario.

MS. LADAK: That's correct.

MS. HARE: Is your mic on, Ms. Ladak?

MS. LADAK: Okay, I think it's on. Is that better?

MS. HARE: Yes.

MR. SMITH: You are also a certified professional accountant.

MS. LADAK: That's correct.

MR. SMITH: And your career with Ontario Power Generation began in approximately 1995.

MS. LADAK: That's right.

MR. SMITH: And you had finance or controllership is related responsibilities generally throughout that period.

MS. LADAK: That's correct.

MR. SMITH: And I understand that you began your career with Ernst & Young.

MS. LADAK: That's right.

MR. SMITH: Mr. Fitzsimmons, you are the vice president of health and safety, labour, and employee relations?

MR. FITZSIMMONS: I am.

MR. SMITH: And in that position, I understand that you bear responsibility for the negotiation of OPG's collective agreements, and other labour related agreements.

MR. FITZSIMMONS: That's correct.

MR. SMITH: And you have been with OPG in a human resource capacity since approximately 1996.

MR. FITZSIMMONS: That's correct.

MR. SMITH: And I understand that you are a member of various human resource related organizations, as set out on your curriculum vitae.

MR. FITZSIMMONS: Correct.

MR. SMITH: Ms. Earle, you are the director of human resources?

MS. EARLE: Correct.

MR. SMITH: And you have responsibility for certain areas of OPG's compensation and benefits evidence, as I understand it.

MS. EARLE: That is correct.

MR. SMITH: And until recently you also operated as the human resource manager at the Pickering station.

MS. EARLE: Correct.

MR. SMITH: You are a graduate of Queen’s University, with a bachelor of mathematics.

MS. EARLE: Yes.

MR. SMITH: And as I understand it, you began your career in human resources at Ontario Power Generation on graduation back in 2002.

MS. EARLE: That is correct.

MR. SMITH: Why don't I just pause there and ask members of the panel, with the exception of Dr. Chaykowski, if you adopt, for the purposes of testifying Ontario Power Generation’s corporate group and compensation related evidence, including the prefiled evidence, the answers to interrogatories, undertakings, and technical conference evidence for the purposes of testifying today.

MS. LADAK: I adopt the evidence.

MS. EARLE: I adopt the evidence.

MR. FITZSIMMONS: I adopt the evidence.

MR. SMITH: Dr. Chaykowski, your curriculum vitae – sorry, members of the Board, Dr. Chaykowski’s curriculum vitae was filed as Exhibit A 1, Tab 9, Schedule 2, page 5. It's lengthy, some 33 pages, and I don't propose to review it all of it.

I understand there is not a challenge to his qualifications, so I will move relatively quickly.

Sir, you a full tenured professor at Queen's University?

DR. CHAYKOWSKI: I am.

MR. SMITH: And my understanding is that you are cross-appointed at the school of policy studies, as well as the faculty of law.

DR. CHAYKOWSKI: Yes -- sorry, appointed in the school of policy studies, and cross appointed to the faculty of law.

MR. SMITH: I understand that you have a Ph.D. in industrial and labour relations, which you obtained in 1988 from Cornell University.

DR. CHAYKOWSKI: That's correct.

MR. SMITH: And you have a master's in economics, and a bachelor's degree in economics, both of which you obtained from Queens University.

DR. CHAYKOWSKI: Correct.

MR. SMITH: And were you retained by us to review the state of industrial relations in the broader public sector in Ontario?

DR. CHAYKOWSKI: I was.

MR. SMITH: And were you further asked to situate Ontario Power Generation within that broader public sector?

DR. CHAYKOWSKI: Yes.

MR. SMITH: And is your opinion, sir, in relation to those matters, set out in your report?

DR. CHAYKOWSKI: It is.

MR. SMITH: And for reference, that's the report that can be found at Exhibit F 4, Tab 3, Schedule 1, attachment 1?

DR. CHAYKOWSKI: Yes.

MR. SMITH: And that is dated September 2013.

DR. CHAYKOWSKI: Correct.

MR. SMITH: Now, do you adopt that report, and any interrogatories asked in relation to that report, for the purposes of testifying today?

DR. CHAYKOWSKI: I do.

MR. SMITH: Now, let me just very briefly -- do you have your curriculum vitae?

DR. CHAYKOWSKI: I don't.

MR. SMITH: Let me just highlight a couple of things for you.

In your curriculum vitae, you indicate, sir, that you have had certain responsibilities, or research related responsibilities on various government commissions; do you recall that?

DR. CHAYKOWSKI: Yes, I have.

MR. SMITH: And in particular in 2011, you were involved in work for the Ontario government, as I understand it.

DR. CHAYKOWSKI: Yes.

MR. SMITH: Can you describe that for us?

DR. CHAYKOWSKI: I was asked by the Drummond Commission, by Don Drummond, to assess -- along with a colleague in my department, to the assess labour relations in the Ontario broader public sector and, in particular, to look at labour relations and collective bargaining outcomes as they have evolved, to look at interest arbitration including both the interest arbitration process in the Ontario broader public sector, as well as interest arbitration outcomes, including wage outcomes, and also the structure of collective bargaining in the Ontario broader public sector.

That was with a view to considering centralization of collective bargaining versus decentralization of collective bargaining. The report also touched upon issues related to union successorship laws, in case of a change of business ownership, and also touched upon the issue of essential service workers.

MR. SMITH: Now, I understand, sir, that you have taught courses in the school of policy studies, the school of industrial relations, at the graduate level?

DR. CHAYKOWSKI: That's correct.

MR. SMITH: And at the undergraduate level as well?

DR. CHAYKOWSKI: That would be in the faculty of arts and science, as I recall.

MR. SMITH: Am I correct, sir, that as detailed in your curriculum vitae, you have written extensively in the area of industrial relations?

DR. CHAYKOWSKI: Yes.

MR. SMITH: And that include as number of peer-reviewed articles?

DR. CHAYKOWSKI: Yes, it does.

MR. SMITH: Have you written textbooks or monographs I the area as well?

DR. CHAYKOWSKI: Yes, I have.

MR. SMITH: All as detailed on your curriculum vitae?

DR. CHAYKOWSKI: It is.

MR. SMITH: I understand, sir, that you have also written articles in various periodicals, professional, technical and other publications.

DR. CHAYKOWSKI: Yes, I have.

MR. SMITH: Again, all as detailed in your curriculum vitae?

DR. CHAYKOWSKI: It is detailed there.

MR. SMITH: And is it fair to say of the literally dozens of publications that are set out in your curriculum vitae, that all or substantially all of them relate to industrial relations?

DR. CHAYKOWSKI: Yes. They all relate to the broader field of industrial relations.

MR. SMITH: And am I right that you have also acted as -- in a variety of administrative capacities at Queen's University?

DR. CHAYKOWSKI: I have.

MR. SMITH: And what have those generally involved?

DR. CHAYKOWSKI: Well, most recently I was the program director for the industrial relations program at Queen's, and that has been housed in the School of Policy Studies.

And in addition to that, a variety of other university-related committees and so forth, that relate to the governance and functioning of the university. They are all enumerated in my CV.

MR. SMITH: And you have been an invited speaker at -- as detailed at pages 29 through to 32 of your curriculum vitae, you been an invited speaker at a number of industrial relations-related symposiums?

DR. CHAYKOWSKI: Yes.

MR. SMITH: And finally, I understand that you have provided expert evidence and testimony in a variety of proceedings, including two that may be apposite here today, being the Fraser case and the BC Health Services case; is that --

DR. CHAYKOWSKI: That's correct.

MR. SMITH: Both of which went to the Supreme Court of Canada?

DR. CHAYKOWSKI: That's correct.

MR. SMITH: Members of the Panel, I propose to tender Dr. Chaykowski as an expert in industrial relations, able to provide opinion evidence as further described in his report that's been filed.

MS. HARE: Thank you. Are there any comments? Any submissions?

MR. MILLAR: Mr. Smith, sorry, could you repeat what you are seeking to have him qualified as?

MR. SMITH: As an expert in industrial relations specifically in relation to the matters detailed in his report that's been filed. And that is so you have greater specificity in relation to, as I said at the outset, in relation to the broader -- or the context, the industrial relations context for the broader public service in Ontario and OPG's relative position in that.

MR. MILLAR: Okay. Thank you very much.

MS. HARE: Mr. Millar, do you have any objections to Dr. Chaykowski being deemed an expert witness?

MR. MILLAR: I don't on those terms. I will have some questions about his report, of course, and exactly how all of it relates to his expertise, but I am not challenging his expertise.

MS. HARE: Okay. Thank you.

MR. SMITH: Dr. Chaykowski, have you got your report handy?

DR. CHAYKOWSKI: Yes, I do.

MR. SMITH: Given my request to end a bit early today, I am not going to go over your report in great detail, but there are a couple of things I wanted to highlight.

Beginning -- it's not page-numbered, but beginning in your executive summary and main conclusions, does that portion of the report fairly set out the matters discussed in your report and your conclusions in summary form?

DR. CHAYKOWSKI: Yes.

MR. SMITH: Now, there are a couple of items I just wanted to bring out that I am sure we are going to go over in greater detail in cross-examination, but at the bottom of your executive summary, you talk about the importance of interest arbitration. And I'd just ask you to explain what you mean by the importance of interest arbitration as it relates to collective bargaining.

DR. CHAYKOWSKI: Okay. Well, in the Ontario broader public sector, the industrial relations system of course relies on collective bargaining. And of course in many sub-industries within the Ontario broader public sector where the parties come to an impasse, they may come to rely upon interest arbitration to resolve their differences.

In some cases, the resort to interest arbitration may be mandatory. It may be decided upon voluntarily in some cases. But either way, you really have two prongs to the resolution.

One is through collective bargaining, and if you reach an impasse and it can't be resolved after a strike or lockout situation, interest arbitration typically kicks in, and of course the decision of the interest arbitrator is final and binding on the parties, and that will form the collective agreement.

In the case of electricity, interest arbitration is relied upon by some parties at some points in time, over time. And fairly frequently -- for example, in relation to the use of interest arbitration in the private sector -- it is relied upon quite significantly in this particular industry.

So in that sense, interest arbitration is an important feature of the broader industrial relations system in Ontario.

MR. SMITH: Let me ask you, you use the word "patterning" several times in your report, and maybe you can just help us and the Board with what you mean by "patterning" in bargaining.

DR. CHAYKOWSKI: Sure. "Patterning," as the term suggests, means that one party is trying to mimic, if you will, the results or outcomes of a second party.

So in the case of collective bargaining, one party might seek to essentially pattern or mimic the types of outcomes that were achieved in another round of collective bargaining in some other collective agreement situation.

In the case of interest arbitration, an arbitrator may look to apply principles of comparability. To see how the agreement that's before them should shape up, they might compare the situation in that case to a similar situation elsewhere in the sector, and say: Well, look, I think these situations are comparable, and therefore I think the outcomes in the collective agreement should also be comparable.

And in this way, through both collective bargaining as well as the interest arbitration process, you tend to see agreements and/or interest arbitration awards pattern after each other over time. In other words, they tend to mimic each other over time.

MR. SMITH: Let me just pick up on that. You used the word "may" earlier. To what extent, in your experience, is patterning an aspect of bargaining or interest arbitration awards that you're reviewed?

My apologies. Collective bargaining in Ontario and interest arbitration awards, those that you've reviewed, in any event.

DR. CHAYKOWSKI: So it would vary by sector. And I would say less so, for example, in the private sector relative to the broader public sector.

And within the broader public sector, there is variation across sub-industries within the broader public sector. I would characterize industries such as healthcare or long-term care and electricity, I would characterize the use of patterning as very high.

MR. SMITH: Thank you. Those are the questions I had in examination-in-chief, and I tender the panel for cross-examination.

MS. HARE: Thank you.

Mr. Houldin, I think you are first up?

## Cross-Examination by Mr. Houldin:

MR. HOULDIN: Thank you, Madam Chair and Panel. I have just a few questions on behalf of the Society of Energy Professionals.

My first question is: Has there been a history of collective agreements between Ontario Power Generation and its predecessor Ontario Hydro with the Power Workers' Union and the Society of Energy Professionals?

MR. FITZSIMMONS: Yes.

MR. HOULDIN: Do you know how far back those collective agreements go?

MR. FITZSIMMONS: The first agreement with the Society of Energy Professionals would have been 1993.

The Power Workers dates back in -- their predecessor, the Ontario Hydro Employees Union, into the 1950s, I believe.

MR. HOULDIN: Thank you very much. The 2014 and 2015 human resources costs that are in your application are based on collective agreements; is that correct?

MS. LADAK: Yes, that's correct.

MR. HOULDIN: Thank you. For the 2014-2015 period, is it OPG's intention to respect its obligations under the collective agreements?

MR. SMITH: It's OPG's position that we are required at law to do so.

MR. HOULDIN: Okay, thanks very much. I now ask you to turn to, alas, an item that's not in my voluminous compendium; it's 50 percent short.

The reference is the Aon Hewitt report; it's F5, tab 4, schedule 1.

MS. EARLE: Yes, we’ve got that.

MR. HOULDIN: And in particular, on page 6 you should find a list of the comparator organizations that were used by Aon Hewitt.

MS. EARLE: Yes.

MR. HOULDIN: Do you agree that in the sample of comparator companies, only Hydro-Québec, New Brunswick Power and Bruce Power operate nuclear generation plants?

MS. EARLE: Yes, I accept that.

MR. HOULDIN: Thank you. Do you agree that the Hydro-Québec plant is of a fundamentally different design than any of the CANDU reactors operated by OPG?

MS. EARLE: Unfortunately, I am probably not in a position to be able to confirm or deny that.

MR. HOULDIN: Is there anyone on the panel that feels they could answer that? Perhaps you could take -- there could be an undertaking to talk to your nuclear experts, and get back to the Board on that.

MR. SMITH: I suppose we can do that. I might be able to catch them as they are leaving the building today. I believe actually the Hydro-Québec nuclear power plant is now closed, in fact, but we can ask them the question about whether its operational characteristics are different.

MR. HOULDIN: Actually, it's not operational characteristics. The design, I believe, is different. It's a boiling water reactor is my understanding; it's not a pressurized water reactor.

MR. SMITH: Yes, we can ask that question.

MR. MILLAR: So the question for J7.9 is whether the Hydro-Québec facility is a boiling water facility versus?

MR. HOULDIN: A pressurized water.

MR. MILLAR: Thank you.

UNDERTAKING NO. J7.9: TO CONFIRM WHETHER HYDRO-QUéBEC'S NUCLEAR FACILITY IS A BOILING-WATER OR PRESSURIZED-WATER SYSTEM

MS. HARE: And the relevance of that to this panel, Mr. Houldin?

MR. HOULDIN: These are meant to be comparator organizations with respect to operating nuclear plants. One would think that the comparator organizations should be similar to those of OPG.

MS. HARE: Okay, thank you.

MR. HOULDIN: Okay, next question. Do you agree that of those three companies, New Brunswick Power, Hydro-Québec, and Bruce Power, only Bruce of those actually operates more than one reactor?

MS. EARLE: Again, I would have to take that subject to check. I am not necessarily familiar with the extent of those stations.

MR. HOULDIN: Okay. I don't think we need an undertaking for that, but it should be subject to check. I think that's a fairly commonly known fact; Bruce Power operates eight reactors.

MS. EARLE: I do know that about Bruce Power. It's the other ones that I am not as familiar with.

MR. HOULDIN: I assert, I guess, that New Brunswick only operates one reactor, and Hydro-Québec used to operate one reactor.

Okay. So moving on, would you agree -- again I will ask the question, but I suspect it will be similar. Do you agree that Bruce Power's experience with the Bruce A station, as opposed to the Bruce B, is very limited, again with a view to being a comparator to OPG?

MS. EARLE: Unfortunately, again I am not fully aware of the extent of their operations, so I am not sure that I can fairly comment on that.

MR. HOULDIN: Could I ask for a undertaking on this, again, from OPG's nuclear experts, as to when Bruce -- how many years of operating experience has Bruce Power actually had with Bruce A?

MR. SMITH: I am not certain I fully understand, in that they have operated some of the reactors for longer. But I am not sure what Mr. Houldin is asking us for precisely.

MR. HOULDIN: Okay. To OPG's knowledge, how many years has Bruce Power operated its reactors at the Bruce A station?

MR. SMITH: I mean, I think it's a relative matter of public record that when Bruce was transferred to -- the Bruce lease was transferred or entered into, the Bruce B units were operational, and only more recently were the Bruce A units refurbished. So I don't dispute they have operated the Bruce B units for longer than they have operated the Bruce A units, if the that's the proposition.

MR. HOULDIN: What I am getting at is total operator experience of multiple units on the part of Bruce versus the experience that OPG has had, again with a view to shedding some light on how valid the comparison is.

MR. SMITH: We can ask, if the Board would like us to, for the number of years that Bruce has operated the Bruce B units to OPG's knowledge, and the number of years that Bruce has operated the Bruce A units to OPG's knowledge.

MS. HARE: I will tell you, Mr. Houldin, that my hesitation in not saying anything is because it is all a matter of public record. So you could actually put it to the witnesses to confirm, because you know the answer, do you not?

MR. HOULDIN: Actually I don't. Bruce B is -- the information about Bruce B is actually very hard to get hold of. It's a limited partnership, and they don't put a lot of information in their annual reports.

But I won’t belabour the point. If OPG are unwilling to take an undertaking on this, then it's not crucial.

MS. HARE: I am just not sure this panel actually knows. This panel is comprised of people that are experts in human resources, compensation, industrial relations. Why would they know anything about Bruce B or A?

MR. SMITH: I know that the Bruce lease was entered into in 2001, and at the time the Bruce B units, all four of which were operational, and Bruce has been operating them since then. And Bruce A was only refurbished in the last few years.

I would prefer not to have an undertaking if greater precision than that is -- if that level of precision is satisfactory to Mr. Houldin.

MR. HOULDIN: That will be fine. Again, this panel is speaking, I gather, to the Aon Hewitt report. So that's the panel to which I am directing my questions, and the issue is one of comparability.

If I can move now to the compendium, so this is an extract, page 7 --

MR. MILLAR: Mr. Houldin, this hasn't been marked as an exhibit yet, so I propose to do that. It will be K7.3.

EXHIBIT NO. K7.3: SEP CROSS-EXAMINATION COMPENDIUM FOR PANEL 5

MR. HOULDIN: Thank you, Mr. Millar. On page 7, you will see the title "Survey Design", and the very last major bullet says:

"Survey target was 50 percent of the total OPG population. Actual reportable survey reports represent 54.3 percent."

What I am not clear about is does that mean respondents, that the respondents to the survey represented 54.3 percent of the comparable positions? Or is it some other percentage?

MS. EARLE: So the 54.3 percent represents the number of positions at OPG that were part of this survey, so it was greater than half of OPG's positions in terms of employee population that went into this. We submitted over 7,000 individual salaries. And ultimately, after the job-matching, it resulted in 54.3 percent of the employee population which was captured in this survey.

MR. HOULDIN: Okay. So do you happen to know, of the other companies that Aon Hewitt surveyed, what the response rate to their survey was?

MS. EARLE: I don't believe that I have that offhand. I don't believe I have that information.

MR. HOULDIN: Could you find that out?

MS. EARLE: For each of the participating organizations, what percent response rate?

MR. HOULDIN: No, actually all I really need to know is, for the overall group, what the response rate was to Aon Hewitt. They sent out surveys, or they did it by some means or another. Of the number of surveys that they issued, what was the percentage that actually responded?

MS. EARLE: I can take an undertaking to get that information.

MR. HOULDIN: Okay.

MR. SMITH: Sorry, I just want to make sure that I am getting the right undertaking. I understood the answer in relation to the 54.3 percent to be 54.3 percent of the 7,000 employees were capable of being matched across the other companies in the comparator group, which is different than how many of the people in the comparator group responded to your survey.

So they are different questions, and I just wasn't sure what it was that Mr. Houldin was asking for.

MR. HOULDIN: It was the latter, because I wasn't sure what the table meant. That was clarified for me, so it's the second issue.

MS. HARE: So it's the response rate you are going after?

MR. HOULDIN: That's correct.

MS. HARE: But how does that compare to this 54.3? 54.3 is not the response rate, is it?

MS. EARLE: That was -- OPG was able to match 54.3 percent of their jobs against the comparator organizations that participated in the survey.

MS. HARE: But are we comparing apples or oranges, then, when we then ask about the response rate in the other companies? I just don't understand.

MR. HOULDIN: It's -- in all surveys the response rate is important. Any political poll, surveys that the OEB does about customer satisfaction, any kind of survey you want to know how many people who were asked actually responded.

MS. HARE: But what I heard Ms. Earle say is that this isn't the response rate; this is the matching rate.

MR. HOULDIN: Right. So I am asking a separate question. I understood what this is.

MS. HARE: Okay. That's fine. That's fine.

MR. HOULDIN: And I want to know what the response rate was.

MS. HARE: So let's also ask what the response rate from OPG was. Otherwise, when you ask of the other participants, what are we comparing it to?

MR. HOULDIN: No, no. I am talking about the Aon Hewitt survey. They did the survey. I want to know what the response rate was to their survey. It doesn't matter what OPG -- OPG is the contracting party to Aon Hewitt. I just want to know, of the people that Aon Hewitt asked, how many of them actually responded, just as you would in almost any other survey that's done.

MS. EARLE: We can certainly do that. I would say that the report itself actually lists the incumbents that were matched within the comparator groups, so that information is there. And it's quite a large number of matches, if you are still looking for the overall response rate.

MR. HOULDIN: To the survey, yes. As a separate issue from -- I first of all wanted to clarify the numbers here. I just want to know what the response rate was to the Aon Hewitt survey, just as -- we just had an election in Ontario.

MS. EARLE: Right.

MS. HOULDIN: So when people did all the overnight polls, you would -- if you looked in the fine print of EKOS or Forum or whatever, they would tell you what the response rate was.

MS. EARLE: Maybe I will just back up a second.

So all of the employers listed participated. That was our response rate. We went out and we asked a broad group to participate in the survey, and that is the list of those who did participate in the survey.

And from there, the jobs that we were able to match were matched to those organizations.

MR. HOULDIN: Right. I understand that. But of the questions they were asked, I gather they didn't respond to all of the questions. Or did they? Maybe they got 100 percent response rate to the survey, which is almost unprecedented.

MR. SMITH: We will give the undertaking, but I think the witness and the cross-examiner are completely missing each other.

I think the question that is being asked is: There are 19 organizations listed on page 6. They all provided information. OPG was able to match 54.3 percent of the job classifications across those organizations.

I think the question is: You may have asked more than these 19 organizations for information, or Aon Hewitt may have. How many other organizations did they ask for input?

And if I have got that right, then we can ask that question of Aon Hewitt.

MR. HOULDIN: No, that's not the question I am trying to get answered.

I am just trying to -- there is a total number of questions that were asked in this survey to what you say is 19 organizations. Of those total number of questions that were asked, what percentage were actually answered? So that's -- I mean, I can't boil it down any more than that.

MS. EARLE: I will accept the undertaking, but again, by virtue of us sending out the survey to the organizations requesting participation, it would have been on the basis of the questions that we sent out that they would have provided a response, if they had that information.

But I can, on a best-efforts, take an undertaking to see what that actually --

MR. HOULDIN: Okay. That's fine, yes.

MR. MILLAR: J7.10.

UNDERTAKING NO. J7.10: TO EXPLAIN WHAT PERCENTAGE OF QUESTIONS ASKED IN AON HEWITT SURVEY WERE ACTUALLY ANSWERED.

MR. HOULDIN: Okay. So moving on quickly, are you aware of any efforts by Aon Hewitt to correct for any non-response bias?

The non-response bias, of course, is where people don't respond to a survey, and the usual assumption is that the respondents fall from the same distribution as the people who did respond, but it often turns out -- that's the pragmatic thing that pollsters do, for example, but statistical agencies such as Stats Canada find out that there can -- an assumption can often be wrong, that there is something called non-response bias.

Are you aware if Aon Hewitt takes that into account?

MS. EARLE: So there was terms of reference, obviously, for this survey. And I think OPG would have relied on Aon as an expert in their field, and would accept that they would be following the best practices, which would include compensating for any of those biases, et cetera.

MR. HOULDIN: Again -- but do you know that that's what they did? It's one thing to -- is the terms of reference confidential?

MS. EARLE: No. It's actually provided in evidence.

MR. HOULDIN: Oh, okay. Could you give me...

MS. EARLE: The reference is Exhibit L, tab 6.8, schedule 17, SEC 115.

MR. HOULDIN: Thank you very much.

Are you aware of any independent reviews of Aon Hewitt's own proprietary data?

MS. EARLE: No, I am not aware.

MR. HOULDIN: Okay, thank you. How confident are you that in this survey, Aon Hewitt used data from Bruce Power? Like again of all the universe of questions that are the total questions that they asked, are you confident that a reasonable number of those were responded to by Bruce Power?

MS. EARLE: Yes.

MR. HOULDIN: Yes? Okay.

MS. EARLE: To the best of my knowledge.

MR. HOULDIN: Okay. The last question; I would ask you to go to the other document in the compendium, so that's Exhibit F4, tab 3, schedule 1.

This was recently updated, and I think in the update it's page 14 -- in any event, it's table 5.

MS. EARLE: Yes, we have got that.

MR. HOULDIN: So I just ask, so the -- if you look at the table there, you will see there are cumulative numbers for the wage increases of the Society of Energy Professionals compared among the successor companies to Ontario Hydro. And there are three highlighted rows there; one for the historic period, one for 2014, one for 2015.

Am I correct that with the exception of Kinectrics and Inergi, the cumulative Society of Energy Professional’s wage increases for OPG are lower than those for other Ontario Hydro successor companies?

MS. EARLE: Yes, that's what's in this chart.

MR. HOULDIN: Thanks very much, Madam Chair. That concludes my questions.

MS. HARE: Thank you. Mr. Stephenson, do you wish to proceed?

# Cross-Examination by Mr. Stephenson:

MR. STEPHENSON: Thank you, Madam Chair, and good afternoon, panel.

My name is Richard Stephenson, and I am counsel for the Power Workers' Union.

I think I want to start by exploring with the panel the issue of the constraints that OPG faces, in terms of attempting to reduce its compensation costs.

Let me start here just -- I take it there is no issue that when OPG started its existence back in 1998, it inherited a collective agreement from Ontario Hydro, and that occurred by virtue of the provisions of the statutes that actually implemented the restructuring of Ontario Hydro, correct?

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: And so when OPG was born, so to speak, it was legally bound by -- let me focus for the PWU for the purposes of this discussion, it was legally bound by a collective agreement with the PWU from the very -- from its very inception.

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: And similarly, the other Ontario Hydro successor companies were likewise in the same situation, that would be -- among others, there is Hydro One, and the IESO, and the OPA, et cetera; correct?

MR. FITZSIMMONS: The companies that were born out of Ontario Hydro, yes, were subject to successor rights under the Ontario Labour Relations Act.

MR. STEPHENSON: And then there were other companies that were spun out of the first group of successors, if I can call it that. So we have heard reference to companies, for example, like Inergi, and there is a company called Vertex (ph), and there is a company called New Horizons, and there is a company called Kinectrics.

And those companies were all spun out of one or other of Hydro One, or OPG, or another of Ontario Hydro successor; correct?

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: And again, by operation of law, each of those companies inherited whatever collective agreement was resided in the company they were spun out of, correct?

MR. FITZSIMMONS: That's right.

MR. STEPHENSON: Now, Mr. Fitzsimmons, I take it you were personally involved in the collective bargaining that led to the 2012 PWU collective agreement, is that correct?

MR. FITZSIMMONS: The 2012 to 2015 collective agreement?

MR. STEPHENSON: Yes, yes.

MR. FITZSIMMONS: No, I was not.

MR. STEPHENSON: Okay. What is the basis of your knowledge of the events that took place leading to that collective agreement?

MR. FITZSIMMONS: Could you clarify what you mean by the events leading to that agreement?

MR. STEPHENSON: Well, the bargaining. That collective agreement took place by virtue of -- there was a negotiated settlement, correct?

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: And do you know anything about what happened in those negotiations?

MR. FITZSIMMONS: I know the context in which collective bargaining was entered into. I know the results of collective bargaining. But I don't have intimate knowledge of what the exact discussions were at the table, if that is what you are asking.

MR. STEPHENSON: Okay. Well, let's see how far we can go.

I take it you would agree with me that when it comes to any round of collective bargaining with any trade union, each side has its priorities, that not every single item is the same priority and you have to figure out what's the most important to you; fair?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: And at the time of the bargaining for the 2012-2015 PWU collective agreement, business transformation was a known initiative at OPG, correct? It started before that?

MR. FITZSIMMONS: It had started before that, in terms of management initiated actions. I would have to refresh my memory on the exact timelines, but communications around staff reductions were occurring in or around the time of collective bargaining.

MR. STEPHENSON: And can you confirm for me that in that round of collective bargaining, one of OPG's key priorities was to ensure that nothing got embedded in the collective agreement that would constrain OPG's ability to execute on business transformation?

MR. FITZSIMMONS: Yes, our overarching priorities were around cost containment and focusing on the ability to maintain staff reductions.

MR. STEPHENSON: And I take it you knew that you were going to have -- or OPG knew that it was going to have a very difficult if not impossible situation, in terms of attempting to achieve an absolute reduction in compensation rates in that bargaining, correct?

MR. FITZSIMMONS: That would be correct.

MR. STEPHENSON: And so it chose -- its priority was to choose another avenue to permit it to contain its overall compensation costs, and that was through staff reduction, correct?

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: And so OPG actually succeeded in that bargaining, in terms of achieving that priority, correct? There were no roadblocks imposed on OPG's ability to execute on business transformation, correct?

MR. FITZSIMMONS: One of the priorities that we wanted to maintain was the ability, to the extent that we could not achieve reductions through attrition, that is the number of people that were leaving through retirement, was the ability to focus some severances if the case may be, and we indeed negotiated a provision that would enable us to do that.

MR. STEPHENSON: Okay. Now, we know through your evidence that you had a mandate from your shareholder or OPG had a mandate from its shareholder to seek to achieve what they referred to as "net zero" in the collective bargaining with the Power Workers' Union in 2012.

You're familiar with that; correct?

MR. FITZSIMMONS: Yes, I am.

MR. STEPHENSON: And OPG satisfied itself at the end of the day after that bargaining was complete, that it, in fact, had achieved that mandate; correct?

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: And critical to the achievement of that mandate, I take it, was, again, the avoidance of anything in the collective agreement which would constrain your ability to execute on business transformation? That was a critical building block in the achievement of net zero?

MR. FITZSIMMONS: Yes, with a focus on staff reductions.

MR. STEPHENSON: And this issue of net zero becomes an issue in the Society interest arbitration which takes place the next year; correct?

MR. FITZSIMMONS: More so with the Society, because the actual direction from the government at that point had changed. And the change in direction at that time had moved from a net zero, which companies and unions were acting upon as being any increases needed to be correspondingly offset by savings, to a direction that said there could be no increases in compensation, and furthermore any movement through a respective pay grade needed to be fully offset.

So the directive from the -- expectations, rather, from the shareholder had slightly changed by that point.

MR. STEPHENSON: In any event -- and maybe I can just get you to turn up in my compendium, and maybe we could actually just get that –- a number for that.

MR. MILLAR: It's Exhibit K7.4. It's the compendium of the Power Workers' Union for panel 5.

EXHIBIT NO. K7.4: PWU CROSS-EXAMINATION COMPENDIUM FOR PANEL 5.

MR. STEPHENSON: Thank you. Tab C of that document is, in fact, a copy of the Society interest arbitration from Mr. Albertyn, and you are familiar with this document?

MR. FITZSIMMONS: I am, yes.

MR. STEPHENSON: Okay. And in that document, he deals at some length with the issue of: Did OPG succeed or not succeed in getting net zero with the PWU; correct?

MR. FITZSIMMONS: Correct.

MR. STEPHENSON: Okay. And at the end of the day, he actually concludes that OPG did not succeed in getting net zero with the PWU; correct?

MR. FITZSIMMONS: Correct.

MR. STEPHENSON: And you dealt with this issue in an undertaking response -- and maybe we can just pull that up. Bear with me a moment. It's actually not in my compendium, I am afraid, but it's Undertaking JT2.34.

And as I understand it, in this document, you explain to us that -- it's right at the very last sentence of the undertaking response, is that:

"For strategic labour relations reasons, these..."

Which is the staff reduction numbers.

"...were not put before the arbitrator by OPG."

Do you see that?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: Okay. And when that -- these, those numbers, are the numbers that are on the confidential attachment to the document; correct?

MR. FITZSIMMONS: Correct.

MR. STEPHENSON: I am not going to get into the -- disclosing any of those numbers on the record at this stage, but can you just assist me what the strategic labour relations reasons were? And if it's problematic for you to do that on the record, you just tell me and we can figure out another way of dealing with it.

MR. FITZSIMMONS: Maybe if I could make an attempt just to describe this in theory, as opposed to without any of the specifics and the tactics behind that.

MR. STEPHENSON: Yes, sure.

MR. FITZSIMMONS: So, I mean, the strategic labour relations reasons have to do with the value or the worth of these provisions to the company vis-à-vis its priorities when you are in a round of negotiations. And to the extent the value of those are known by the other side, that enables the other side to extract more concessions out of the company in order to succeed in advancing some of their positions.

MR. STEPHENSON: So if this is worth X dollars to you, we are expecting some quid pro quo, or whatever?

MR. FITZSIMMONS: Correct.

MR. STEPHENSON: Okay. And so that's -- in a nutshell, that's the explanation of the net zero versus the Albertyn decision; do I have it there? It is that issue, the value of the staff reductions?

MR. FITZSIMMONS: In terms of the difference of the conclusions between what OPG says it attained and what Albertyn concluded?

MR. STEPHENSON: Yes.

MR. FITZSIMMONS: So yes, that is the primary driver behind that.

The arbitrator, Mr. Albertyn at the time, also asked OPG to do, redo some calculations based on how he saw the costs should be calculated. So between a recalculation and the some of the savings, that would explain what the net difference is between the two results.

MR. STEPHENSON: I just want to deal with one other item while we are on this document. One of the things that, as I understand it, is very common in interest arbitration is each of the sides seeks to identify other collective bargaining relationships which they say are comparable, and that should form the basis of this patterning that Dr. Chaykowski referred to.

You are familiar with that phenomenon; correct?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: And that, in fact, occurred in this very round of interest arbitration in front of Mr. Albertyn; correct?

MR. FITZSIMMONS: Indeed it did.

MR. STEPHENSON: And bear with me just a moment. Reflected in his decision -- I think it's at page 16 -- starting at page 15. This is at tab C of the compendium. You will see there is a heading there, External relativities." And then over on page 16, there is a list of seven companies that the Society said were relevant comparators; do you see that?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: Okay. And I take it that OPG didn't quarrel with their relevance as comparators. They might have quarrelled with the significance of them, but they didn't quarrel that they were relevant comparators; correct?

MR. FITZSIMMONS: That's correct.

MR. STEPHENSON: Okay. And you will note there that one of them -- it's item C -- is actually this institution. It's the Ontario Energy Board, where the SEP has, the Society has a bargaining unit; correct?

MR. FITZSIMMONS: That's my understanding, yes.

MR. STEPHENSON: And I take it that these -- all of these collective agreements were filed as part of this interest arbitration; correct? That's the way these things work? You get these great big briefs and everybody files their comparative collective agreements, right?

MR. FITZSIMMONS: These -- the references here were actually made in chart form.

MR. STEPHENSON: Okay.

MR. FITZSIMMONS: By the Society.

MR. STEPHENSON: Okay. Well, in any event, can I get you to turn up tab D of our compendium, which is the very next one? And the -- are you there? D as in David?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: Okay. And that's the collective agreement that's identified at C of page 16; right? That's the Society and OEB collective agreement for the relevant period; correct?

MR. FITZSIMMONS: Sorry, I just want to cross-reference back to --

MR. STEPHENSON: Yes. Page 16 of tab C versus tab D.

MR. FITZSIMMONS: Given that the dates in tab C are contained within the relevant collective agreement in tab D, which goes from a period of June 9th, 2011 to March 31st, 2015, yes, I would agree.

MR. STEPHENSON: Okay. All righty. Now, in terms of -- let me back up a minute.

There is one other document I would just like you to turn up for a moment, which is -- it's Exhibit L, tab 6.8, schedule 1, and it's Board Staff Interrogatory 101. I think that should be coming up on your screen.

And you will see it's question C as in Charles. And OPG was asked how much lower the revenue requirement it would be seeking in this case would be if OPG had gotten with the PWU the agreement that they got with the Society.

In other words, 0.75 percent, which is what I think the Society got; correct?

MR. FITZSIMMONS: The Society received 0.75, 1.75 and 1.75.

MR. STEPHENSON: Okay. And in any event, the answer to the question is $30 million; you see that?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: Now, here is my question, and it's all about achievability. Would -- was OPG capable of achieving a negotiated settlement with the PWU in April 2012 on those terms? That is, on the terms that you eventually got from Albertyn for the Society?

MR. FITZSIMMONS: The agreement with the PWU was achieved through an economic increase, with corresponding cost offsets. The parties in that particular round of negotiations had bargained to the point where they had reached an impasse, which engaged a precondition to a strike, which is the appointment of a conciliation officer under the Ministry of Labour.

And what I am also advised of and -- which I knew, was this must have been a matter of particular significance, given the fact that the particular mediator that was appointed was Reg Pearson, who is well known for intervening in very, very significant labour disputes.

So given that, in light of the fact that it would appear that what had been bargained to at that point was an impasse, that I doubt that there was any further room to go in terms of achieving the same economic result in terms of the increases that was achieved with the Society.

MR. STEPHENSON: Right. We simply cannot go back now and say that, you know: You achieved a deal on certain terms with the PWU in one round of negotiations, and then through a different process, you achieved a different result with a different union. There is no basis that anybody can assume that you can simply transpose those results, and that that was actually an achievable outcome with the PWU in the prior year.

That is the reality, isn't it? There is simply no basis to do that transposition exercise?

MR. FITZSIMMONS: I would agree with you, yes.

MR. STEPHENSON: Let me talk, now, for a moment about -- and this may get Dr. Chaykowski involved in this conversation. Would you agree with me that at the end of the day, from an outcomes perspective in terms of what parties are able to achieve in any particular round of collective bargaining, at the end of the day, that by far the most significant factor which dictates the outcome is simply the relative bargaining power of the two parties.

DR. CHAYKOWSKI: I would certainly agree that that is a primary factor. Absolutely.

MR. STEPHENSON: It really isn't much more complicated than that. The party that's got more bargaining power can drive a better deal in its favour?

DR. CHAYKOWSKI: In an overall sense, I would agree with that -- in an overall sense I would certainly agree with that, but of course in any particular round of collective bargaining, the trade-offs that present themselves across different specific issues may vary.

So the net zero increase example is a good one, because you are making a lot of different trade-offs in that particular round of collective bargaining, and the trade-offs that present themselves in an alternative round of collective bargaining may be quite different for different reasons, because the constraints change.

MR. STEPHENSON: And I just want -- there will be a number of different factors which will contribute to the parties' relative bargaining power in any circumstance, right?

The bargaining power is sort of a -- is the label that you put on a whole bunch of individual considerations; fair?

DR. CHAYKOWSKI: Absolutely. They range from legal considerations to -- including legislative considerations, to the -- could be public pressure on one party or the other. Of course, there are always financial considerations and the financial health of either the union or a particular organization.

So there are a wide range of factors that feed into what determines the relative bargaining power of the parties.

MR. STEPHENSON: And you deal with this to some extent in your report, but just by way of a few illustrations, I mean, one factor which may give an employer a bargaining power is the ability to threaten to take the work elsewhere, to simply shut down and move to another jurisdiction?

DR. CHAYKOWSKI: That's been a very major factor in a large number of private sector industries, yes.

MR. STEPHENSON: And I take it, needless to say, that is not a factor which the employer can employ, at least in a significant way, in the OPG case; fair enough? You can't move your generation offshore?

DR. CHAYKOWSKI: I would certainly agree with that. I think that's true of most broader public sector industries in Ontario, but it certainly appears to be true in electricity.

MR. STEPHENSON: Mr. Fitzsimmons, you are not planning on moving Darlington out of the jurisdiction, I take it?

MR. FITZSIMMONS: No, we are not.

MR. STEPHENSON: Okay. And another factor which may affect bargaining power is the threat of insolvency; correct?

DR. CHAYKOWSKI: Absolutely.

MR. STEPHENSON: And, again, Mr. Fitzsimmons, I take it that OPG is not planning on threatening to go insolvent any time soon?

MR. FITZSIMMONS: No, it's not.

MR. STEPHENSON: Another factor is the ability of the employer to operate in the face of a work stoppage; correct?

DR. CHAYKOWSKI: Absolutely.

MR. STEPHENSON: And that's important, I take it, for two reasons.

The first reason is if the employer is available to continue to operate in the face of a work stoppage, it's able to keep its revenue stream alive?

DR. CHAYKOWSKI: There are certainly considerations around the revenue stream, but depending on the industry and sector, there is also the public consideration as well.

MR. STEPHENSON: Right. And that's the -- you know, a classic example of that would be like a garbage strike in Toronto, for example, in the middle of the summer?

DR. CHAYKOWSKI: I would certainly say the garbage strike in Toronto, which has had lasting repercussions, politically and socially, but I would suggest that electricity supply is pretty critical to the public as well.

MR. STEPHENSON: Right. But the other way that the ability of the employer to continue to operate in the face of a work stoppage is important, is because it gives the employer the ability to inflict economic pain on the workers?

DR. CHAYKOWSKI: That's correct.

MR. STEPHENSON: In other words, they can be locked out and left without pay until the case is resolved?

DR. CHAYKOWSKI: Right. And in any work stoppage, whether it's a strike or a lockout, both sides incur economic loss.

MR. STEPHENSON: And we've heard from OPG that its management has concluded that it is simply not able to operate its nuclear business in the face of a PWU work stoppage.

And you would agree with me that that is a very significant factor, which affects the parties' relative bargaining power?

DR. CHAYKOWSKI: That would be a significant factor, but I also would add that I think the impact on the public and hence the political impact would also be substantial.

MR. STEPHENSON: And you deal with this in your paper. The reality is when we are dealing with a commodity that has a significant public impact, in all probability what we are talking about, rather than an actual work stoppage of any duration, is actually some form of mandated back-to-work combined with some form of arbitration? That's typically what happens in these cases?

DR. CHAYKOWSKI: In my judgment, I think it would be highly unlikely that the government of the day would allow for a lengthy work stoppage, because of the potential impact on the public. And therefore they would probably resort to back-to-work and mandatory interest arbitration.

MR. STEPHENSON: I have forgotten whether your paper deals with this, but I know you will know the answer. There is a body of research out there that has done some comparative analysis in terms of outcomes as between collective agreements determined by interest arbitration on the one hand, and collective agreements determined by the bargaining and the strike threat scenario. And my recollection is that that body of research says that, generally speaking, interest arbitration awards are more generous to the workers.

DR. CHAYKOWSKI: Yes. I reviewed that literature in my report to the Drummond Commission. And the weight of the research indicates that wage settlements awards tend to be higher than negotiated wage settlements over time. That's correct.

MR. STEPHENSON: And would you agree with me that both the -- your assessment that in the absence of a negotiated settlement, that some form of forced interest arbitration, in this case, I mean, that's not just your judgment? You would assume that both the OPG and the PWU are pretty live to that reality. It's a sort of an obvious point, isn't it?

DR. CHAYKOWSKI: I think that's true across the Ontario broader public sector, where you have industries that are producing services that are vital to the public. So I think that would absolutely hold in the case of OPG and Power as well as Society.

MR. STEPHENSON: And the fact that everybody knows that, that that's the alternative reality, that also informs their respective positions when it comes to the bargaining relationship and the bargaining dynamic?

DR. CHAYKOWSKI: I would agree with that. In fact, it's sort of well-known that in a lot of cases, unions tend to prefer interest arbitration. That's true very generally in industrial relations, because they realize they tend to get better outcomes.

MR. STEPHENSON: I want to talk about comparators and benchmarking and the limits to all of that, in a collective bargaining environment.

There have been -– and, Mr. Fitzsimmons, I think you will know, but I -- I have forgotten the timing on this and you can help me. My recollection is that the Aon Hewitt report, which is an exhibit in this proceeding, was not available at the time of the PWU bargaining in March of 2012; am I right about that?

MR. FITZSIMMONS: That's my understanding. The report was not finalized at that point.

MR. STEPHENSON: Nevertheless, there has been a variety of benchmarking of various kinds done previous to that; fair?

MR. FITZSIMMONS: Yes.

MR. STEPHENSON: And in any event, I mean, it was no mystery or no secret to OPG in March of 2012 that there were comparator companies out there that paid people less than OPG; correct?

MR. FITZSIMMONS: Correct.

MR. STEPHENSON: And, I mean, it was a big topic the last time around in the 2010 hearing, right? You were -- OPG knew all about that in March of 2012; correct?

MR. FITZSIMMONS: Correct.

MR. STEPHENSON: Okay. So here is the question I have. So you have got some benchmarking report, and it says that a bunch of companies pay people less than you. So you are going into collective bargaining, and you are armed with that piece of paper.

What do you do with it? What difference does it make in the bargaining process?

MR. FITZSIMMONS: Having that information in the bargaining process to hand across the table is not going to make any difference in terms of the outcome.

We do use this information. This information is shared with our unions as part of our management, our ongoing management of labour relations, to give them an appreciation of the issues that the company is looking at and the changes the company is going to be pursuing, so that in the event that we enter collective bargaining and there is an issue on the table, let's say, like pensions, it's not the first time the union is hearing about it. They have at least been socialized to the issue; there has been some education provided.

But once we are in the act of bargaining itself, it really comes down to what trade-offs can be made, and that benchmarking is going to have very little influence on the outcome.

MR. STEPHENSON: And maybe this is for Dr. Chaykowski. In a world where there's -- lots of people who benchmark about lots of things, in the -- benchmarking is not new in the industrial relations world; correct?

DR. CHAYKOWSKI: Not at all.

MR. STEPHENSON: Okay. To the extent that people -- that benchmarking results were an influential feature in determining collective bargaining outcomes, wouldn't we expect a regression to the mean in terms of wage levels? That everybody would try to, you know, seek to impose the median on their bargaining opponent?

DR. CHAYKOWSKI: They might seek to impose it, but they might not achieve it.

MR. STEPHENSON: That is what I am talking about. That's what -- if it was -- actually governed what was achievable, you would expect to see a regression to the mean, wouldn't you?

DR. CHAYKOWSKI: You could.

MR. STEPHENSON: The reality is there is no evidence of a regression to the mean amongst comparator companies in terms of collective bargaining outcomes?

DR. CHAYKOWSKI: Well, I would want to be careful in answering that, in the following sense, that comparators are used all the time. And the Albertyn award is a very good example of that, but I think the use of the term needs to be clarified.

When Albertyn uses the word "relevant comparator" and so forth, my interpretation is he is looking at another collective bargaining unit where he sees comparable workers, a comparable union, a comparable industry and a comparable firm within that industry, and is going to draw comparisons because he thinks that they are meaningful.

And that is very different, I think, than relying upon a broad survey throughout a jurisdiction or a country or even across countries.

So I think in some sense they are almost apples and oranges. And when you look at, for example, interest arbitration decisions -- and, again, going back to the work that I did in forming up the report for the Drummond Commission, I examined a very, very large number of interest arbitration awards for the Ontario broader public sector. And they talk about comparability all the time, but they don't talk about benchmarking, using benchmarking reports or surveys.

What they mean is finding comparative collective bargaining units. And usually there is only several of them. And again, the Albertyn award is a very, very good example of that, because he is looking at Bruce or he is looking at Hydro One.

I think that's the context in which comparators are used in interest arbitration awards, as well as in collective bargaining. You won't -- in my experience, I haven't recalled ever seeing -- for Ontario broader public sector interest arbitration awards, I don't recall ever seeing reference to market surveys and so forth, and this sort of thing.

MR. STEPHENSON: But let me just see if I can get you one step farther, and that is even when we come to comparables more narrowly defined -- in the Albertyn sense of the word "comparables," as opposed to the Aon Hewitt sense of the word, if that makes sense to you -- isn't the way that those comparables are typically used is to maintain relativities, as opposed to achieving absolute outcomes?

DR. CHAYKOWSKI: The relativities are extremely important.

MR. STEPHENSON: I mean, isn't the reality that what you see in a world, in a universe of a cohort of employers and unions that are somehow in some sense comparable, what you tend to see over time is a pecking order, and that the -- you know, the pecking order is maintained over time, because what is maintained is the relativities as opposed to the absolute dollars?

DR. CHAYKOWSKI: I think there is a major focus on the relativities, yes.

MR. STEPHENSON: So it's not so much that the comparable is getting paid -- you know, I am making -- our guys are making $20 an hour and the comparable is making $25 an hour. Isn't really the focus of it is that the guys making $25 an hour got a 2 percent increase and we have got to get a 2 percent increase in order to maintain the relativities?

DR. CHAYKOWSKI: I think that is often how it is interpreted, yes.

MR. STEPHENSON: But you would agree with me that somebody is not going to be able to move their guys from 20 to 25 merely because there is somebody else out there that got 25, unless they have actually got bargaining power in the way that we were describing -- talking about 20 minutes ago?

DR. CHAYKOWSKI: If the outcome is achieved through collective bargaining, that's -- I would agree that that's probably the case.

MR. STEPHENSON: And the same thing in reverse, that an employer isn't going to necessarily get their union to bend over for them if they can point out to some –- there's somebody out there that's being paid less, unless they have whatever the indicias of bargaining power are otherwise?

DR. CHAYKOWSKI: Yes. I agree. The bargaining power is extremely important if you are going to deviate from the pattern of relativities that have been established.

MR. STEPHENSON: And, Mr. Fitzsimmons, you have another round of collective bargaining with the PWU coming up before the end of this test period, in the spring of 2015. And I am not going to ask you to tell me anything about your bargaining strategy, believe me.

MR. FITZSIMMONS: Good.

[Laughter]

MR. STEPHENSON: But let me ask you this question. If this Board says to OPG, you know: We look out at the Aon Hewitt study, and it says that you're whatever, 10 percent over median -- I don't even know what the number is, but some number over median. And we think in your next round of collective bargaining, because we are going to tell you to do it right now, we think you should go out and get a 10 percent absolute reduction in PWU compensation. Not headcount reduction; I mean wage rate reduction. What -- sitting here today, in your view, what is the probability of you being able to achieve that outcome?

MR. FITZSIMMONS: I think that would be -- that would be an issue that would be bargained to impasse, and in my opinion, that would be an issue that would result in a strike.

MR. STEPHENSON: The probability that you are going to get a negotiated agreement whereby you're getting a 10 percent reduction is nil; correct?

MR. FITZSIMMONS: That would depend on whether we determined at the time that we were prepared to take a strike over that matter or not.

MR. STEPHENSON: I am saying assuming that -- I mean, you, sitting here today, your assumption is if you took that -- if you told the PWU that, you know: If you want -- if you are going to avoid a 10 percent reduction, you are going to have to strike, sitting here today, you have a very high confidence that you would get a strike, right?

MR. FITZSIMMONS: I am fairly certain we would get a strike.

MS. HARE: Mr. Stephenson, is this a good place to stop? Are you available Monday to continue?

MR. STEPHENSON: I am. I spoke to Mr. Smith about that, and I am happy to resume on Monday morning.

MS. HARE: So is this a good place?

MR. STEPHENSON: This is as good as any.

MS. HARE: Okay. I just wanted to talk about the schedule going forward, then, for a minute.

So this panel will be on Monday and likely all of Tuesday. We are not sitting on Wednesday.

But then is Ms. McShane available on Thursday?

MR. SMITH: Yes, I believe so.

MS. HARE: Because we will likely be at panel 6, then, on Thursday, whether it's first thing in the morning or later in the day. So if she is available, that would be good.

And then we will decide whether it's worth starting panel 7, because if we start panel 7 there would be a break in any event.

MR. SMITH: Yes. Sorry, I follow you. Yes, that makes -- I follow you.

MS. HARE: If we start panel 7, say, on Thursday afternoon or Friday, they won't be done. So perhaps you would discuss this with Mr. Millar and Ms. Binette, but we can see how it goes next week as well.

MR. SMITH: I am sorry, I am just looking at the estimate for panel 7 and it's lengthy.

MS. HARE: Mm-hmm. So that would be something to consider, whether you would want to start or whether you just want to postpone it.

MR. SMITH: Okay. Well, we will have a chat and then we will chat with Mr. Millar.

MS. HARE: Okay. Very good. So we will pick it up, then, on Monday at 9:30. Thanks very much. Have a nice weekend.

MR. SMITH: Thank you very much.

### --- Whereupon the hearing adjourned at 3:48 p.m.