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THE ONTARIO ENERGY BOARD

Ontario Power Generation Inc.

Application for payment amounts for the period from
January 1, 2027 to December 31, 2031

Technical Conference held person and virtually
at 2300 Yonge Street, 25th Floor, Toronto, Ontario
on Thursday, May 28, 2026, commencing at 9:30 a.m.

Day 2

A P P E A R A N C E S

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IAN RICHLER	
THOMAS EMINOWICZ	
JEFFREY SAUER	
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TOM LADANYI	Coalition of Concerned Manufacturers and Businesses of Canada (CCMBC)
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MAIA CHASE	Independent Electricity System Operator
KEITH PINTO	Keith Pinto
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SCOTT WALKER	Ontario Association of Physical Plant Administrators
COLIN FRASER BOHDAN DUMKA	The Society of United Professionals
MIKE MCLEOD	Quinte Manufacturers Association
MARK RUBENSTEIN JANE SCOTT JAY SHEPHERD	School Energy Coalition (SEC)
DAN ROSENBLUTH BAYU KIDANE	PWU
MARK GARNER	Vulnerable Energy Consumers Coalition (VECC)
COLM BOYLE	WTFN Investment Holdings LP
NICK PENDER MATT SIKSTROM MARC CHIDIAC NICOLE FABBRO MELISSA HANNON MATTHEW KIRK	Panel 1 - Hydroelectric Operations and Hydroelectric Projects and Projects and Market Renewal Program
KATHLEEN CAREW MOHAMED EL DEFRAWY ANTHONY MELARAGNO PERRIK LE DREFF JOHN BLAZANIN DEREK KINDLON SCOTT NELMS JOEL PEREIRA	Panel 2 - Darlington Refurbishment Program, Pickering Refurbishment Program, and Nuclear Operations and Nuclear Projects

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Thursday, May 28, 2026

--- On commencing at 9:30 a.m.

M. MILLAR: Good morning, everyone. Welcome to Day 2 of the EB-2025-0297 tech conference. We are going to be starting with Mr. Buonarguro for CCC, but, Ms. Coban, are there some preliminary matters to deal with?

PRELIMINARY MATTERS

D. COBAN: Yes. Good morning. We had an exchange yesterday with Board Staff regarding information that is provided to the IESO under a form pursuant to the market rules. So we took that away, and what we can agree to provide you is an undertaking to confirm that the latest information that was provided to the IESO under that form is consistent with the production forecast in this application. And if there are any variances, we can reconcile those for you in the undertaking response.

T. EMINOWICZ: So just to confirm, this would be both for the hydroelectric production forecast and nuclear production forecast?

D. COBAN: I believe you were only asking for the hydroelectric so --

T. EMINOWICZ: We -- we were discussing hydroelectric at the time, and then we paused, but I was interested in the overall for both sides. And so for context, this -- from our perspective, this relates to the bill impacts. The reliability outlook

1 is a key input into how the Ontario Energy Board sets
2 RPP rates, our regulated pricing plan rates, and so
3 that is where we are coming from on this.

4 And so if you are able to just provide, like,
5 the difference in terawatt -- I don't understand,
6 like, what you mean by whether it is, like, the same,
7 like, what threshold you would use to determine that
8 what was provided to the IESO for the reliability
9 outlook would be the same as what is provided here,
10 but that is the context. It is bill impacts because
11 the reliability outlook is what is used -- that --
12 that information is what is used for setting consumer
13 rates by the Ontario Energy Board.

14 D. COBAN: So we will have to take the nuclear
15 piece back and consider your request as part of the
16 undertaking response. I can't commit to it right
17 now, but we can consider it within the undertaking.

18 M. MILLAR: Let's mark it as JT-2.1.

19 **UNDERTAKING JT-2.1: CONFIRM WHETHER THE LATEST**
20 **INFORMATION PROVIDED TO THE IESO IS CONSISTENT**
21 **WITH THE HYDROELECTRIC AND NUCLEAR PRODUCTION**
22 **FORECASTS IN THIS APPLICATION**

23 M. MILLAR: Are there any further matters, Ms.
24 Coban?

25 D. COBAN: No. That is all. Thank you.

26 M. MILLAR: Okay.

27 Mr. Buonarguro, I have you down for about an
28 hour. Great.

1 M. BUONARGURO: Yeah, I expect it will be less.
2 As I was saying earlier, it depends how confused I
3 get.

4 **EXAMINATION BY M. BUONARGURO:**

5 M. BUONARGURO: Good morning, Panel. My name is
6 Michael Buonarguro. I am counsel with the Consumers
7 Council of Canada. I recognize that there was --
8 already had a full day of questioning on this Panel,
9 so I am going to be poking through what I have left
10 to try and get some further clarity on some of the
11 issues.

12 If I could start with a reference. If we could
13 pull up Exhibit L, A1-CCC-009, Attachment 11. So you
14 can see this is an internal audit. This was actually
15 referred to yesterday. I think it was by Ms. Scott.
16 And I am looking specifically at page 7, which has a
17 -- detailed audit findings. I am just going to go
18 through some of what it says first and have you
19 confirm that I have read it correctly.

20 So, first off, the audit results right at the
21 top of the page note that the renewable generation
22 overhaul projects were not consistently adhering to
23 OPG's project management framework; is that correct?

24 N. PENDER: As per audit, yes.

25 M. BUONARGURO: And this lack of adherence to
26 the project management framework was contributing to
27 adverse project performance; is that correct?

28 N. PENDER: Yeah, of the eight sampled, five

1 were unfavourable.

2 M. BUONARGURO: Thank you.

3 And I was going to ask you about the
4 unfavourable results. It says that five sampled
5 projects were reporting unfavourable cost performance
6 and got zero results; correct?

7 N. PENDER: Correct.

8 M. BUONARGURO: Can you provide the budget costs
9 and final costs for those five sample projects?

10 N. PENDER: I don't have this in front of me
11 right now, but that is something we could --

12 D. COBAN: Before we agree to give that
13 undertaking, maybe what we can do, Mr. Buonarguro, is
14 consider this at the break. And if that information
15 is already on the record, we can direct you to that
16 reference; and if not, we can revisit the
17 undertaking.

18 M. BUONARGURO: Okay. So the -- should we have
19 a placeholder undertaking?

20 D. COBAN: No. We will get back to you after
21 the break, if that is okay.

22 M. BUONARGURO: Okay. So we will park it for
23 after the break.

24 So I think what you are telling me, through, is
25 that it may already be on the record; it is just a
26 matter of linking those five projects to the projects
27 in the audit?

28 D. COBAN: Correct. We are going to see if it

1 is; that way, we can avoid.

2 M. BUONARGURO: And then if it is not, then you
3 give me an undertaking to provide it, it sounds like.
4 Okay. That is fine. I am just making a note so I
5 don't forget.

6 So similarly, the audit refers to six of the
7 projects reporting unfavourable schedule performance.
8 Can you provide the forecast duration for the
9 projects and the actual duration for those projects?

10 D. COBAN: I think we would have to roll that
11 into the previous request.

12 M. BUONARGURO: Fair enough.

13 D. COBAN: Yes.

14 M. BUONARGURO: Thank you.

15 Now, generally speaking, I think this is
16 probably, obviously, true, but the duration of the
17 completion of an overhaul project impacts the
18 duration of the related outage?

19 N. PENDER: Could you repeat the question again.
20 Sorry.

21 M. BUONARGURO: So the longer it takes to do a
22 project, the more of a planned outage you are going
23 to require, the more time that the generation unit is
24 not generating?

25 N. PENDER: Possibly, yeah. So kind of a couple
26 of factors; there is the size of the project, and
27 then there is the length of the outage, which sits
28 under the project. The two aren't necessarily the

1 same length. So closure of the project finishing up
2 loosely, you can draw that conclusion, not linear.

3 M. BUONARGURO: Right. So there would be
4 exceptions, but generally, you would expect that that
5 is probably one of the outcomes of a longer-than-
6 planned overhaul project?

7 N. PENDER: It is one of the outcomes, yes.

8 M. BUONARGURO: Okay. Fair enough.

9 Now, going over to page 10 of the same document.
10 This refers to a turbine overhaul framework document.
11 My understanding is at the time of the audit, there
12 was no such document; is that correct?

13 N. PENDER: Bullet 3, we say the management will
14 finalize and roll out the RG TG overhaul program
15 framework documents, so -- and that was due for
16 completion May 31st, 2023.

17 M. BUONARGURO: Right. I took from the way that
18 that was scripted that at the time of the audit,
19 there wasn't one. It sounds like you were working on
20 one, and you want to -- you were to issue it by May -
21 - what was it, May 31st, 2023; is that fair?

22 N. PENDER: That is my interpretation, yes.

23 M. BUONARGURO: Okay. Thank you.

24 Now, was the new framework actually completed?
25 And if so, when?

26 N. PENDER: We can find the reference to this.
27 I believe it is done. We just -- it is in one of the
28 filings on record, so I just can't find the exact

1 location right now.

2 M. BUONARGURO: Okay. So you can confirm it was
3 done; you just have to find it in the record, or you
4 want to see if it is in the record? Like, I am --
5 based on what you just said, I wasn't a hundred
6 percent sure you are saying, yeah, we did it, we just
7 have to find it; versus, we are not a hundred percent
8 sure that we actually completed it.

9 N. PENDER: Yeah, we will confirm we have an
10 overhaul framework document. I want to make sure
11 that the exact language in this bullet point is
12 exactly per procedure. So that is why --

13 M. BUONARGURO: Okay.

14 N. PENDER: -- I wanted to find the reference.

15 M. BUONARGURO: Okay. So you want to confirm
16 that it -- what is being referred to in this document
17 was actually completed, and then you can -- if you
18 do, you can tell me where it is in the record if it
19 is in the record or you can tell me when it was
20 actually completed?

21 N. PENDER: Correct.

22 M. BUONARGURO: Okay. So that is interesting
23 because my next question is on the assumption that
24 you did complete one and that it is being used,
25 whether it has had an impact on the overhaul project
26 since it has been put into place. Can you answer
27 that without confirming that it was done?

28 N. PENDER: Yeah, I can confirm where it is. So

1 maybe if we go to Exhibit A1-4-1, Attachment 4,
2 please. And if we could go to page 32 of Attachment
3 4. And if we could look at the right-hand column,
4 third row down:

5 "Management will finalize and roll out the RG TG
6 overhaul program framework document." [as read]

7 And the status of that was closed.

8 And if we just go up a couple of pages, we can
9 give you the reference to this follow-up audit.
10 Sorry. Yeah, so we confirm it is closed.

11 M. BUONARGURO: So what does "closed" mean?

12 N. PENDER: That the action was completed.

13 M. BUONARGURO: So the -- a document was
14 created?

15 N. PENDER: Correct.

16 M. BUONARGURO: Can you produce it?

17 N. PENDER: We will be able to, yes.

18 M. BUONARGURO: Okay.

19 M. MILLAR: Undertaking JT-2.2.

20 M. BUONARGURO: And that is to provide the
21 renewable generation turbine overhaul framework
22 document that is referred to at page 10 of the audit
23 that was included at Exhibit L, A1-CCC-009,
24 Attachment 11.

25 **UNDERTAKING JT-2.2: PROVIDE THE RENEWABLE**
26 **GENERATION TURBINE OVERHAUL FRAMEWORK DOCUMENT**
27 **WHICH IS REFERRED TO AT PAGE 10 OF THE AUDIT**
28 **INCLUDED AT EXHIBIT L-A1-CCC-009, ATTACHMENT 11**

1 M. BUONARGURO: So that returns me to my follow-
2 up question, is if you can discuss if and how the
3 implementation of that document has impacted your
4 performance in performing overhauls.

5 N. PENDER: There was a subsequent follow-up
6 audit to this in which we received -- I think that
7 was a yellow finding in the prior audit you were
8 referencing. We received a white audit, which is --
9 which is -- I think has a definition of
10 "satisfactory" as opposed to "requires improvement."

11 M. BUONARGURO: So let me see if I understand
12 what you are saying. So there was the audit that I
13 referred to. It looked at your performance on
14 overhaul projects, using example of eight. It found
15 specific costs in the schedule performance issues
16 with five and six of the projects. You undertook, in
17 relation to that audit, to implement a new framework
18 document. You implemented a new framework document,
19 but the details are to be determined when you find it
20 and are able to give it to me.

21 And then when I asked the question, how has that
22 impacted your performance, you are pointing me to a
23 subsequent audit that looked, again, at the same
24 issues, at overhaul performance, and says it has
25 improved relative to the audit that I provided as a
26 reference?

27 N. PENDER: So specifically to your question
28 around performance, one of the areas we have

1 implemented as part of our process is oversight of
2 our refurbishments across the province. And we have
3 instituted a refurbishment oversight committee, which
4 looks at performance, overhaul and refurbishment
5 performance, key CPI and SPI metrics that were
6 referred to in the management action plan on page 10,
7 bullet number 2. And we use that as a business to
8 have oversight of individual performance of the
9 refurbishments that are underway.

10 M. BUONARGURO: Okay. So I think you just told
11 me that you are looking at performance, and you
12 described to me how you are looking at performance.
13 But I don't think you have actually answered the
14 question, how performance has been affected by the
15 implementation of this new framework document, other
16 than to point me to a subsequent audit. But fair
17 enough.

18 Is that subsequent audit on the record? And
19 forgive me if it is because I know there is a lot of
20 information on the record, and I don't necessarily --
21 can tell which ones are tied together in the way you
22 are describing. Could you provide that subsequent
23 audit that you referred to?

24 D. COBAN: Yes, we can do that.

25 M. MILLAR: That is JT-2.3.

26 **UNDERTAKING JT-2.3: PROVIDE THE AUDIT**
27 **SUBSEQUENT TO THE AUDIT THAT WAS INCLUDED AT**
28 **EXHIBIT L, A1-CCC-009, ATTACHMENT 11**

1 M. BUONARGURO: So then in terms of answering
2 the question, how has overhaul performance been
3 affected since the audit that I referred to, the
4 answer is, I am going to have to find that in the
5 audit you are going to produce for details?

6 N. PENDER: To your specific question around
7 performance, there is quite a few aspects of
8 performance to look at; cost, schedule. There is
9 many areas we can kind of start to unpack. When you
10 say, "has it improved," I can dive into components,
11 but I don't -- at a generic level, we have a
12 framework policy document that provides guidance on -
13 - on the governance we undertake in our refurbishment
14 program. We have very specific performance of
15 different individual projects, which are -- if you
16 can think of them as a portfolio of projects. You
17 know, there is many underway at any one point in
18 time, each at a different location with a different
19 team, performing work.

20 So across those elements, we have clarity on how
21 we approach it. If you are asking, what is the
22 specific measure of improvement, I think is the
23 question you are asking, we can -- we can -- we
24 haven't detailed the CPI or the SPI of an individual
25 project.

26 M. BUONARGURO: Sorry. I didn't quite catch
27 that. Are you saying you could do that or you have
28 done that? Or -- I didn't quite catch what you said.

1 N. PENDER: We track that.

2 M. BUONARGURO: You do track it, okay.

3 So, for example -- so you pointed me to a
4 subsequent audit and provided an undertaking to
5 provide that audit. Am I to understand that that
6 audit looked at a basket of overhaul projects that
7 were prepared that were undertaken subsequent to the
8 new document coming out that should -- and that that
9 is part of how the performance has been affected?

10 N. PENDER: Yeah. It was a review of -- we were
11 talking about the RG TG overhaul program.

12 M. BUONARGURO: Yeah.

13 N. PENDER: And we have subsequently -- so this
14 was the audit you are referring to was a 2022
15 document, I believe, and we have subsequently been
16 reaudited on that program by our team. So I was
17 trying to make the correlation that the document you
18 are referring to has a subsequent update --

19 M. BUONARGURO: Right.

20 N. PENDER: -- for intents and purposes. And
21 you are asking the question around has performance
22 increased, and we were trying to understand which
23 element of performance we're going to; cost,
24 schedule, planning, you know, a whole bunch of
25 different areas.

26 M. BUONARGURO: Right.

27 N. PENDER: But I was trying to wrap it together
28 for you to say we have had a subsequent audit on that

1 and given the -- given the controls we have put in
2 place following this 2022 audit, the internal audit
3 team came and had a look at the program and deduced
4 we didn't have a "requires improvement" finding, we
5 had a "white" finding, which I -- if my memory serves
6 me correct, means "generally effective." So consider
7 that as a step up in performance.

8 M. BUONARGURO: Okay. Thank you.

9 I mean, I will look forward to seeing the
10 subsequent audit to see what it says because, I mean,
11 presumably whenever you do an audit -- you mentioned
12 there are different measures of performance,
13 different buckets that you could look at, but
14 presumably the audits look at all of them?

15 N. PENDER: So, again, each audit is very
16 specific. So there is a defined scope in the audit
17 which says these are the aspects they will look at.

18 M. BUONARGURO: Okay.

19 N. PENDER: I don't have it in front of me, and
20 so it is unfair of me to comment exactly to the
21 nature of your question.

22 M. BUONARGURO: Okay.

23 N. PENDER: But I think the deduction you are
24 making is not unreasonable. But I think if we
25 produce this in evidence, we can --

26 M. BUONARGURO: All right.

27 N. PENDER: -- you can see the extent to which
28 we have improved and where that has occurred.

1 M. BUONARGURO: I think you are telling me that
2 it is possible, without looking, that the scope of
3 the audit, the subsequent audit, might be different
4 than the audit I referred to; you are warning me, it
5 sounds like?

6 N. PENDER: I think I am doing more than warning
7 you. I think I am inferring it is better.

8 M. BUONARGURO: It has a wider scope? When you
9 say "better" -- I understand that you are suggesting
10 to me that it shows improvement but -- I think that
11 is what you are -- the primary reason you brought it
12 up, is that it shows improvement in performance.

13 N. PENDER: Correct. And that was the premise
14 of the question.

15 M. BUONARGURO: Right.

16 N. PENDER: You asked the question, have we
17 improved, and without having that material in front
18 of me, I was trying to suggest to you that our
19 internal audit team, through an independent process,
20 have reached the conclusion that we had gone from a
21 "requires improvement" yellow status on this program
22 to the next step better, which is white, "generally
23 effective." And I was trying to make the link that
24 improving categories is a suggestion of performance
25 improvement without having the specifics in front of
26 me, because you are asking a series of very detailed
27 questions to which we can answer, but neither of us
28 have the information --

1 M. BUONARGURO: Okay.

2 N. PENDER: -- to hand to really provide the
3 specificity to which you are asking.

4 M. BUONARGURO: Thank you. I just -- it just
5 took -- what I took to some of what you said after
6 that, since you didn't have the secondary audit in
7 front of you, you couldn't guarantee that the scope
8 of the audit, the criteria that it looked at, was
9 identical to the audit that I had referred to. It
10 may be, but we haven't seen it, so we will see --

11 N. PENDER: I didn't want to mislead you.
12 Correct.

13 M. BUONARGURO: Right. Fair enough.

14 N. PENDER: So we can compare the scope of the
15 2022 audit and the scope of the 2024 audit to
16 determine did it do identical scopes, or was there
17 just a high degree of overlap.

18 M. BUONARGURO: All right. Thank you.

19 So I have an undertaking to provide the
20 secondary audit, and then I -- we are looking at
21 specific information for the five and six projects
22 with respect to cost and performance. You are going
23 to look at that over the break and let me know if we
24 need an undertaking or not. So thank you for that.

25 Now, if I can take you to --

26 N. PENDER: Sorry, just to -- just to clarify.

27 M. BUONARGURO: Sure.

28 N. PENDER: We are going to be specific on those

1 five and six projects that were identified in the
2 2022 audit.

3 M. BUONARGURO: Yes.

4 N. PENDER: Yes, thank you.

5 M. BUONARGURO: If I can take you to Exhibit L,
6 F1-AMPCO-92, page 2. And looking at Chart 1. Oh,
7 wait a second. Oh, okay. I am looking at -- if I
8 look confused, I am looking at the original version
9 of it. I think it has been updated since. You are
10 putting the version of this that was updated
11 subsequent to the motions resolution? Which is fine.
12 I just want to make sure.

13 N. PENDER: Correct.

14 M. BUONARGURO: That is why I am confused. So
15 my apologies.

16 My understanding is that this -- this chart
17 shows -- and I am looking specifically for Chart 1 --
18 this shows all of the overhaul projects for the test
19 year; right?

20 N. PENDER: This shows -- Chart 1 is the
21 allocated OM&A costs associated, yes, with those
22 projects. It doesn't show the capital.

23 M. BUONARGURO: Right. The OM&A. So I am
24 actually -- this is interesting. I am confused. I
25 am looking at the original Chart 1, and the original
26 Chart 1 has 27 projects on it totalling \$39.8 million
27 worth of OM&A, and this one seems to show only --
28 one, two, three, four, five, six -- seven projects.

1 So I am a little confused about what the difference
2 is between the two charts.

3 N. PENDER: Can we go to page 1, please, of 3 in
4 this document.

5 So you are quite correct, line 16 we revised on
6 the -- on the motions resolution filed on May 4, and
7 this interrogatory had been revised. So I think you
8 may have a prior version of it.

9 M. BUONARGURO: Right. But the prior version,
10 which -- do you have easy access to the prior version
11 that we can put on the screen? Because it is quite
12 different for 2027.

13 So the one you are looking at, Chart 1, 2027
14 projects allocated, okay, it is showing 12.8 million
15 in OM&A for 2027 for overhaul projects.

16 The original version of this chart that I am
17 looking at shows, like I said, many more projects
18 with a total OM&A of \$39.8 million.

19 Now, I do note that the difference between the
20 original Chart 1 and the one that is on the screen
21 now, yours says -- the new one says "allocated," and
22 whereas Chart 1 that I am looking at just says
23 "project," so it may be that you have made certain
24 assumptions with respect to allocations for the 2027
25 year.

26 But I am trying to figure out -- the reason I
27 brought it up, because I was wanting to look at the
28 2027 overhaul projects. I thought I had a list that

1 has around 27 projects for a total of 39.8 million,
2 but the update has reduced that, it seems, to 12.8.
3 And it also reduces the number of projects to -- one,
4 two, three, four, five, six -- seven of them. Can
5 you reconcile that? And I think it may have
6 something to do with allocated versus unallocated,
7 but I don't know that for sure.

8 D. COBAN: Mr. Buonarguro, I think we can
9 reconcile that for you. We just need a little bit of
10 time at the break to confirm that that is, in fact,
11 the difference between the two parts.

12 M. BUONARGURO: Okay. Could I try to ask some
13 questions based on the original version of the chart?
14 And I don't know if you have it. It is just the
15 original answer to the interrogatory in the first
16 batch of interrogatory responses.

17 D. COBAN: I think the challenge we have is we
18 don't have the original chart in our materials
19 because --

20 M. BUONARGURO: Okay.

21 D. COBAN: -- it has been updated. So, you
22 know, we want to make sure that the witnesses have
23 the opportunity to see the same information you are
24 seeing.

25 M. BUONARGURO: Okay. So maybe I will give you
26 the opportunity to take a look at the break and
27 reconcile, and then we could have a brief discussion
28 after that.

1 D. COBAN: That sounds good, yeah.

2 M. BUONARGURO: Great. Thanks. Okay. So I
3 will park that and move on to another topic.

4 If we could pull up Exhibit L, A1-CCC-001. So
5 this interrogatory generally asks for updates to the
6 evidence with respect to 2025 actuals. I am looking
7 specifically at the updates with respect to regulated
8 hydroelectric. And there is a summary of all the
9 different drivers of differences between production,
10 regulated base OM&A, project OM&A, and so on. I am
11 looking specifically right now at the project OM&A.
12 And perhaps the best way to do that is to actually
13 look at the attachment that updates from budget to
14 actual. So that is found at Attachment 1, Table 32
15 of that answer. Thank you.

16 So we can see on this table under the column
17 "2025," in the original evidence, that was a budget
18 number, and now it is an actual; correct? For all
19 the categories?

20 M. HANNON: Yes, that is correct.

21 M. BUONARGURO: And looking specifically at
22 total OM&A, the actual for 2025 is showing at 406.1.
23 And can you take it subject to check that in the
24 original evidence, that number was 427.9? So it is
25 approximately a \$20 million reduction from budget to
26 actual?

27 M. HANNON: That is correct.

28 M. BUONARGURO: Now, when this was just a budget

1 number, so in the application, what did that mean?
2 Was that -- what I mean by that is, is that the
3 budget that was prepared internally by the company
4 presumably in 2024 or earlier for the purposes of
5 running the business? Or is it something else?

6 M. HANNON: You are correct there.

7 M. BUONARGURO: Right. So it is your normal
8 budget?

9 M. HANNON: It is a normal budget.

10 M. BUONARGURO: Thank you.

11 And for 2026, is it also a normal budget number?

12 M. HANNON: Yes, it is.

13 M. BUONARGURO: And then 2027 plan, I presume
14 that since you have changed the wording, it is a
15 slightly different thing. Can you explain to me if
16 there is a difference between "budget" and "plan"?

17 M. HANNON: There is no difference. It is
18 because '27 is part of the IR term.

19 M. BUONARGURO: Okay. Thank you.

20 Now, relative to the budget numbers that were
21 2025 and 2026, I think it is necessarily true that
22 there is a difference in terms of how -- the lead
23 time. So you had to -- you have produced a 2027 plan
24 number that was filed in 2025, which means it is
25 about a year or so out. Is that further out than
26 your normal budgeting numbers?

27 M. HANNON: No. It is the same, same timeline.

28 M. BUONARGURO: Okay. Thank you.

1 Now, my understanding is that we don't have on
2 the record any of the budget numbers prior to 2025.
3 Is that right? I think we might have asked for them.
4 I don't know, I can't recall for the OM&A
5 specifically whether they were asked for, but I don't
6 think they are on the record.

7 M. HANNON: I believe you are correct.

8 M. BUONARGURO: Can I get the budget numbers for
9 the OM&A figures prior to 2025?

10 D. COBAN: No, we are not able to provide that.
11 We don't think it is relevant.

12 M. BUONARGURO: So would you agree that the
13 company is asking the board to approve a total OM&A
14 budget based on a forecast which you have told me is
15 the same as your budgeting process?

16 D. COBAN: I mean, we all generally understand
17 that is what we are here to do, yes.

18 M. BUONARGURO: Fair enough.

19 Would you agree with me that that brings into
20 the hearing as an issue the accuracy of the company's
21 budgeting process with respect to total OM&A?

22 D. COBAN: I would agree with you that one of
23 the things we are here to consider is the company's
24 forecast and the basis for that forecast, and you are
25 free to ask the witnesses questions around how
26 budgets are set and managed, that part of the
27 process. But, you know, the difference between
28 annual internal budgets and the amounts we see here

1 on the screen we don't believe is relevant. What is
2 relevant is the trend we see over the period and the
3 reasons for the increase that is being asked for in
4 the test year.

5 M. BUONARGURO: Well, I mean, I think it is
6 pretty common to look at the accuracy of the
7 forecast, not just how it is built up.

8 So, for example, in 2025 the company budgeted
9 \$427 million for total OM&A, but it actually only
10 spent 409 -- or 406 million, which is a \$20 million
11 variance, which suggests that there is a difference
12 between the budget and the actual. And if there is a
13 pattern of variance between budget and actual, that
14 is a relevant consideration for the board. And I
15 think it is routinely a consideration for the board.
16 So I would ask again if we can get the budget numbers
17 prior to 2025.

18 D. COBAN: No. The refusal stands.

19 M. BUONARGURO: All right. Thank you.

20 I am going to move on to -- actually, it is
21 within the same overall interrogatory response, but
22 going to Table 65. This is the HIM -- oh, sorry. I
23 am referring to it because of the -- it refers to
24 HIM, but it is the other revenue update. Thank you.

25 So -- and here, this is -- again, this is an
26 updated 2025, the original forecast. And I think you
27 went through this with Board Staff yesterday. The
28 original forecast, which I can tell you was at G1-1-

1 1, Table 1, was 10.5 million; and the updated actual
2 HIM revenue was on the screen here, 49.7. Do you
3 recall that -- going through that with Board Staff?

4 M. CHIDIAC: Yes, that is correct, and I recall
5 that exchange.

6 M. BUONARGURO: Thank you. And my apologies. I
7 believe I am supposed to say "OEB Staff," not "Board
8 Staff." My apologies.

9 Now, one thing that I found interesting is that
10 the OEB Staff did not take you through 2026. If we
11 look at Exhibit L, E1-Staff-142, Chart 1. You have
12 included the first two months of HIM revenue for
13 January and February 2026, and from that, we can see
14 that the -- in the first two months, the net revenue
15 was 10, 18 -- 10, 8 -- I am having trouble with my
16 math -- 19 million; is that -- am I reading that
17 correctly?

18 M. CHIDIAC: That is correct.

19 M. BUONARGURO: And if we go back to the exhibit
20 we were just looking at, so take that 19 million in
21 the first two months for 2026, you have the forecast
22 for -- the forecast for 2026 for the full year is
23 only 20 million; correct -- or 20.2 million, I should
24 say?

25 M. CHIDIAC: That is correct.

26 M. BUONARGURO: And so already the first two
27 months is -- is -- would you -- is it fair to say
28 that you are going to blow out the 2026 forecast

1 based on that trend?

2 M. CHIDIAC: I wouldn't call it "blow out the
3 trend." I would call it we are above the forecast
4 for 2026. That is correct. And I will add on, it is
5 the same narrative that I shared with the Board
6 yesterday. We had a very, very cold winter, one of
7 the coldest on record, in January and February, which
8 resulted in volatility in the market, which, again,
9 creates a benefit potentially for the HIM.

10 M. BUONARGURO: At this point in time, how far
11 can you update that 2026 number? So we have January,
12 February. I believe in the -- in the question, Board
13 Staff suggested that they would be getting March.
14 They didn't, but they thought they might get March.
15 If we were to update that today, how far can we go?

16 M. CHIDIAC: Subject to check, I think we could
17 go to the end of April.

18 M. BUONARGURO: Can I get that number, please --
19 that update, I should say?

20 M. CHIDIAC: Yes, we could provide that.

21 M. BUONARGURO: Thank you.

22 M. CHIDIAC: So confirming that we will be
23 providing the -- extending Chart 1 essentially in
24 this Staff-142 response to include March and April.

25 M. BUONARGURO: That is fair. Thank you.

26 M. MILLAR: Sorry. Is that a new undertaking,
27 or is that a reference to an older one?

28 M. BUONARGURO: That is a new undertaking.

1 M. MILLAR: Okay. So it is JT-2.4.

2 **UNDERTAKING JT-2.4: PROVIDE AN EXTENDED VERSION**
3 **OF CHART 1 IN THE STAFF-142 RESPONSE TO INCLUDE**
4 **MARCH AND APRIL**

5 M. MILLAR: And sorry. Mr. Buonarguro --
6 actually, I think you just stated what the
7 undertaking is.

8 M. BUONARGURO: Yeah.

9 M. MILLAR: So I think we are good.

10 M. BUONARGURO: So thank you for that.

11 Switching topics slightly. If I could take you
12 to E1 -- sorry -- Exhibit L, E1-CCC-063. And we can
13 start with Chart 1. This is -- this is one of the
14 interrogatories that was updated as part of the
15 motions resolution. And in Chart 1, you have
16 provided the forecast hydroelectric production by
17 region for the 2028 to 2031 period; do you see that?

18 M. CHIDIAC: Yes, I see that.

19 M. BUONARGURO: Now, there was some discussion
20 yesterday, again, with OEB Staff that I was a little
21 confused about, so I wanted to ask some questions
22 about this. In -- also in this interrogatory
23 response, you provided a forecast of planned outages
24 under Chart 2, and you provided forecasted increase
25 in regulated hydroelectric station capacity in Chart
26 3.

27 Can you confirm first that when you look at
28 Chart 1 and the updated forecast, my assumption, and

1 perhaps you can confirm, that includes your forecast
2 for planned outages over the period?

3 M. CHIDIAC: Yes -- yes -- yes, it does.

4 M. BUONARGURO: Thank you.

5 Does it also include the forecast changes in
6 capacity from Chart 3?

7 M. CHIDIAC: That is correct, it does.

8 M. BUONARGURO: Okay. Because I understood
9 yesterday, and I guess I misunderstood. It sounded
10 like there wasn't -- you weren't capturing planned
11 increases in capacity in the forecasting, but you are
12 telling me that when I look at, for example, 2030
13 plan total regulated hydroelectric output of 33
14 terawatt hours, that assumes or incorporates the
15 forecast 2030 planned outage figure of 0.32, and it
16 accounts for incremental increases in capacity in 20
17 -- I guess in this case, it would be '25, '26, '27,
18 '28, '29 and, I guess, partial '30, depending on when
19 it -- when that 4.9 comes into service?

20 M. CHIDIAC: Sorry. Could you repeat your
21 question?

22 M. BUONARGURO: I was just being more specific.
23 You are telling me that these incremental capacities
24 are all accounted for in -- forecast -- the -- sorry
25 -- I should say the forecast period. So I was giving
26 2030 as an example.

27 2030 forecast includes all of the incremental
28 additions to station capacity plus the 2030-specific

1 planned outage number?

2 M. CHIDIAC: That is correct. And that is, as
3 we have stated in Exhibit E1-1-1, that all the
4 refurbishment and capacity additions are included in
5 the production forecast. I think the discussion
6 yesterday was more about the 2027 test year versus
7 the '28 to '31 period.

8 M. BUONARGURO: Thank you. So -- okay. I think
9 I understand the difference.

10 I am just looking briefly at Chart 2, planned
11 outages. 2027, 0.77, that is the planned outage
12 number that you want to embed in the test year
13 forecast?

14 M. CHIDIAC: That is correct.

15 M. BUONARGURO: And can you confirm that from
16 2019 to 2031, that is the highest level of planned
17 outages over the period?

18 M. CHIDIAC: It is the -- as per the table, it
19 is the highest planned outage impact to production.
20 That is correct.

21 M. BUONARGURO: Thank you.

22 Switching gears, looking at A2 -- sorry --
23 Exhibit L, A2-CCC-17. You don't necessarily have to
24 go to it, but you can if you like. And the reason I
25 say that is because I asked, generally, a question
26 about the planning process and the consideration of
27 rate impacts or affordability on the proposed plans,
28 and the response was a referral directly to Staff-16.

1 So if we can go to Exhibit L, A2-Staff-16.

2 And so I looked at this to see where in it it
3 might be responsive to my question, and, you know, I
4 accept that at certain points, there is mention of
5 impacts. But it didn't -- I didn't see anything that
6 suggested to me that in terms of an overall
7 constraint, so the planning that you do, particularly
8 in this case, the hydroelectric OM&A and capital
9 planning for the period, there is no overall
10 constraint about bill impact or affordability. That
11 is not necessarily a consideration in the same way
12 that considerations -- like, I think yesterday you
13 spoke about specific constraints like flexibility and
14 resourcing and safety, for example. I think that was
15 discussed with Mr. Rubenstein yesterday.

16 But I didn't hear anything about overall bill
17 impact or affordability, and I don't see anything in
18 this document that refers to overall bill impact or
19 rate -- or affordability. Can you confirm that I am
20 correct in my view of that, or if not, you know, let
21 me know.

22 S. ZADEH: Sorry. Mr. Buonarguro, if I could
23 just -- so the bill impacts that you referring to are
24 obviously an output of the entirety of the plan, and
25 so your question right now is specific to the hydro
26 business, which is one input into that bill impact?

27 M. BUONARGURO: Yes.

28 S. ZADEH: And this undertaking, as you can see,

1 has been mapped to our last Panel that speaks more
2 generally to the output of the full plan.

3 M. BUONARGURO: Yeah.

4 S. ZADEH: So would it be possible to take your
5 question as part of that Panel?

6 M. BUONARGURO: Well, I may ask that Panel about
7 it, but I think it is relevant to know if anything
8 was directed to the hydroelectric group when they
9 were doing their planning to provide it to the
10 overall plan, right. So I understand what you are
11 saying, that there might be an overall issue about
12 bill impacts and affordability, but presumably, if
13 there was, it would translate into specific
14 directions to hydroelectric and specific directions
15 to nuclear, and I am looking for that level of
16 instruction or constraint, the same way that -- let
17 me just -- sorry. Mr. Sikstrom, I was looking up
18 your name. I can't see it from here.

19 Mr. Sikstrom was discussing the issue of
20 constraints with Mr. Rubenstein yesterday, and you
21 specifically referred to -- I think it was
22 reliability, flexibility, I think maybe safety. You
23 can tell me if I am wrong. But you did talk to him
24 about some constraints. You didn't talk about bill
25 impact or affordability constraints. You may not
26 have been given directions to do it in that way. It
27 may be something that is not dealt with at that
28 level, in which case, that is the answer.

1 I am looking for input from the hydroelectric
2 group as to what directions, if any, they are given
3 with respect to planning when it comes to overall
4 bill impact or overall affordability. And there may
5 be none.

6 S. ZADEH: I will let Mr. Pender speak to
7 affordability or just the inherent constraints that
8 are applicable to the hydroelectric business. But I
9 will say that the bill impact consideration happens
10 as the totality of the plan comes together and is an
11 output of the totality of that plan.

12 So I don't believe that Mr. Pender will have
13 anything to offer on that front, and that -- that
14 bill impact question can go to that last Panel. But
15 I will let Mr. Pender sort of speak through the
16 constraints and his business planning process.

17 M. BUONARGURO: Thank you.

18 N. PENDER: Okay. So let's -- maybe let's take
19 a reference to D2-AMPCO-23. If we could go there, we
20 could start the conversation around how we take into
21 account constraints. Maybe if we start on page 3 of
22 6, would be good. So maybe line 40.

23 We all know this. I mean, it is just some
24 obvious statement of fact. But there is policy
25 direction, and we are aligned with where the province
26 is going in terms of its expectations for its
27 Integrated Energy Plan. So we see lower in the
28 province, and we are a hydroelectric business, and

1 our function is to supply electricity for an
2 increasing demand within the province. And we look
3 at the provincial documents, whether it is IESO,
4 Ministry of Mines, Integrated Energy Plan, et cetera,
5 power for generations, just to guide where the
6 province is kind of going and what they need from our
7 product.

8 When we look at the specifics to which Mr.
9 Sikstrom was referring yesterday, at length, we kind
10 of talked about SEC-41 where we talked about asset
11 condition being the primary factor we are considering
12 for sustaining 1,500 megawatts. And so, again, we
13 had the conversation yesterday around some of the
14 constraints and how we set that plan, and Mr.
15 Rubenstein was asking, like, well, why not do
16 everything, I think was one of the elements he was
17 really poking on yesterday, versus doing very little.
18 And so our challenge and the way we think without it
19 is we start with asset condition first and then we
20 layer on what I am going to call achievability or do-
21 ability.

22 So if you think around where the hydro sites are
23 in the province -- I can take you to A1-4-2, maybe
24 Attachment 1. We live in a big province. Very, very
25 big. And we have stations all throughout the
26 province. So if we just go to -- there. It will
27 just give you a sense of it. Because it might set
28 some context.

1 So we are downtown in Toronto, but if you think
2 around where we have sites -- from Niagara, through
3 to Ottawa, up to North Bay, up to Kapuskasing and
4 Kenora -- geography for our business, as we discussed
5 yesterday, and where we have our teams and crews
6 really has an impact on the capacity of the business
7 to perform work. So what we are really trying to
8 match is asset condition and our ability to execute
9 work.

10 It is helping to think of hydro -- so, I don't
11 know, we have 1,500, 1,600 people, and we are based
12 at 54 sites. So when you do the math, they are
13 relatively small, by and large, and distributed. So
14 when we talk around do-ability of a plan, we have to
15 plan each of those projects at each of those sites,
16 and then have the planning function, the project
17 management resources, have our OEM resources to set
18 out what we think is an executable plan within a
19 funding envelope or in a period of time. And that
20 really sets some constraints on how we schedule, or
21 you might use the word "pace," how we pace the
22 sequencing of outages that we would wish to
23 undertake.

24 And when you are dealing with smaller sets of
25 assets in geographically distributed regions with our
26 own teams and with teams from the OEM, that sets a
27 natural kind of constraint in how much work we can do
28 in one period of time.

1 The other side of it is -- and I think it is an
2 important consideration we haven't really touched on
3 yet -- is market capacity. So we are reflecting on
4 our assets, and we have talked at length that these
5 assets are old, and some of them are over 100 years
6 old. So the approach we take on those depends on
7 which site you are looking at.

8 So, in reality, if you think about a Model T
9 Ford, we are trying to maintain that, and we are
10 trying to maintain a more modern vehicle at the same
11 time. That just presents some natural inherent
12 challenges in the approach we take.

13 We rely heavily on our OEM vendors. So an OEM
14 is an original equipment manufacturer. And a lot of
15 the assets are aging. And Ontario is not unique in
16 that. And the OEM vendor market is a broader, more
17 globalized market, and so we are drawing on that same
18 engineering OEM resource as others are. I can point
19 you to -- you know, if we -- just the regular press,
20 a lot of the hydro companies now are refurbishing
21 their assets and redeveloping their assets, and so
22 they are drawing on the same resource. That creates
23 a constraint for us.

24 M. BUONARGURO: Okay. Thank you for that.

25 What I took from that is that the plan has been
26 put forward. This is as much of the work that we
27 want do that we can accomplish in the five years
28 given resources and logistical issues generally.

1 N. PENDER: It is a bottom-up plan --

2 M. BUONARGURO: Yeah.

3 N. PENDER: -- based on asset need and
4 executability and based on a prioritized need. If
5 that is what you mean, then, yes, I agree with you.

6 M. BUONARGURO: Thank you.

7 N. PENDER: Just as we are thinking, there is
8 one other point we didn't touch on, and I think it is
9 germane to the conversation. Obviously these power
10 stations consume water. They pass water through
11 their turbines. We haven't really touched on
12 environmental requirements.

13 So, again, we live in a province which is both
14 hot and cold, and these stations are outdoors, and so
15 that is a real consideration for us in thinking about
16 when and the timing of doing work. So the -- all
17 times of the year are not equal in terms of the work
18 we can achieve.

19 So if you go north of the city, it gets quite
20 cold, and it usually get a lot of snow. And that
21 again influences the program. Another influence in
22 the program is when we come into spring, as many of
23 you will see in this year, we have freshet. And so
24 those stations aren't effectively available to be
25 worked on for 365 days. There are periods within
26 which we have to manage our work, and that is before
27 we kind of consider environment implications for fish
28 breeding, water levels, et cetera.

1 So the picture I am trying to draw to you is
2 this isn't a warehouse where we can just go in and do
3 the work we want any time we want to. We have to be
4 quite careful around windows we work in and then
5 windows for which the station is at full capacity.
6 So if you are thinking about, let's say, a period of
7 freshet and we are passing lots of water through that
8 station, that is a real consideration for the nature
9 and type of work we would undertake and the duration
10 of when we can start it and when it needs to finish.

11 And I think that is just something -- again, we
12 didn't really touch on it yesterday in your line of
13 inquiry around constraints. It is a very real
14 constraint that we need to think about.

15 M. BUONARGURO: Thank you.

16 Subject to, I would guess, 5 to 10 minutes
17 follow-up on the two information bits that I am
18 waiting for over the break, that is my cross -- or
19 that is not a cross. Those are my questions for the
20 technical conference.

21 M. MILLAR: Okay. Thank you, Mr. Buonarguro.

22 Up next I have Mr. Garner, who I see on the
23 screen. Mark, I have got you down for 10 minutes or
24 so?

25 M. GARNER: Yes, thank you.

26 M. MILLAR: Okay.

27 M. GARNER: And I hope I won't exceed that.

28 M. MILLAR: Over to you.

1 **EXAMINATION BY M. GARNER:**

2 M. GARNER: So thank you, Panel, and I apologize
3 for the inconvenience of not being there, but I only
4 have one area to cover, so hopefully this will be
5 very brief.

6 What I want to talk about is I want to discuss
7 contingency cost. And not -- to not get your counsel
8 excited, not in the specific. I am aware of the
9 Board's decision on confidentiality.

10 I just want you to know, as we go through, this
11 VECC is not a signatory to the confidential
12 information, so our position is that we look at
13 transparency as essential to the customer having
14 faith in this process. So what they see is what I
15 see. And so, of course, we are curious about what we
16 don't see.

17 I just want to tell you where I think we are,
18 and just if I am wrong, someone can correct me.

19 So my understanding of the state of events right
20 now is that the historical contingency costs for your
21 projects are on the record, and that is for both
22 projects built by OPG and projects done primarily
23 through a contractor; is that right?

24 I see you looking at each other, so I hope you
25 are conversing with each other, not that you haven't
26 heard my question but...

27 N. PENDER: Mr. Garner, can I -- just before I
28 respond, could I ask you to repeat the question to

1 make sure I am answering --

2 M. GARNER: Yeah. And maybe -- maybe I will
3 give it -- the two parts to it in full.

4 So I am just, first of all, trying to understand
5 what the record includes right now so I have a clear
6 understanding. So one is that -- as I understand it
7 right now, is if I go through what is being reported
8 in the application, all the historical contingency
9 costs that you have -- you know, on projects that you
10 have presented are shown if they are historical, both
11 for OPG-built projects and contractor-built projects.
12 And also what is in the application is the
13 contingency, actual contingency costs for any OPG
14 projects that are to be built. So I can see that
15 type of information in the application.

16 Is that kind of the state of events we are at?
17 What is only -- what I am trying to really get at,
18 what is only in confidence right now is specific
19 contingency costs for third-party contracted
20 projects, that would be built by third-party
21 contracted projects; is that right?

22 N. PENDER: I will answer the first part of your
23 question. Historical and OPG, you are indeed
24 correct.

25 Just give me a moment for your second part of
26 your question.

27 M. GARNER: That is the third party, which I
28 think is what the Board has held in confidence.

1 D. COBAN: Mr. Garner, thanks for your patience.
2 We are just trying to make sure we are clear on, you
3 know, kind of helping you understand the boundaries
4 of where that line has been drawn.

5 M. GARNER: Sure.

6 D. COBAN: I understand that when we are looking
7 at forecast projects, contingencies have always been
8 redacted. So you are trying to draw some distinction
9 between contracted work versus not, and I don't think
10 that is a distinction that is on the record. All
11 contingencies [indiscernible] basis.

12 M. GARNER: Okay. So thank you. Because I --
13 then I am misunderstanding. I thought that OPG
14 wasn't objecting to contingency costs on forecasted
15 projects for the ones it was building, it was only
16 objecting to contingency costs being shown for
17 projects in which it anticipated having a third party
18 contractor. And that is the way I read the Board's
19 decision.

20 It said:

21 "OEB notes that non-contracted contingency costs
22 and total project costs for which recovery is sought
23 is available on the public record." [as read]

24 "Non-contracted contingency" amounts, it says,
25 in that decision. That is what I thought was OPG's
26 built project. So have I got that wrong?

27 D. COBAN: So the way to read them, Mr. Garner,
28 is that the total project cost is available, but the

1 contingency amounts have been redacted that are --

2 M. GARNER: Okay.

3 D. COBAN: -- implicit in that total.

4 M. GARNER: Okay. Let me -- I want to move on
5 because -- let me digest that. It may or may not
6 really go to where I am trying to go to here. But,
7 you know, this is a technical conference, and this
8 doesn't go quite to the point, but it will help, I
9 think, as I go through the rest of this question.

10 If you could bring up Exhibit L, D1-AMPCO-13,
11 Attachment 8. And just as you bring it up, I will
12 just go to my next thing. You don't need that for
13 the purpose of this -- is -- my first question to
14 you, for the hydroelectric group, for projects that
15 you undertake or even have a third party contractor
16 undertake, is there -- is there a set of policies
17 that OPG articulates for project planners on how to
18 estimate contingency costs for a project?

19 M. SIKSTROM: Yes. We have project governance
20 around project risk management that we provided in
21 D2-AMPCO-69, Attachment 8, which outlines the risk
22 management process which involves how to calculate
23 contingency.

24 M. GARNER: Thank you. I didn't see us looking
25 -- thank you. So that is helpful.

26 Now, is that policy applicable when the project
27 planner is anticipating using a vendor or contractor?
28 Do they follow the same policy? Or -- where I am

1 trying to get at -- or is it the contractor in the
2 bid that puts in the contingency? Which way does
3 that work?

4 M. SIKSTROM: A project risk management
5 governance applies to OPG projects whether it is OPG
6 entirely executed or whether we have vendors within.
7 And in terms of contractor contingency, that depends
8 on the specific project and the contracting setup of
9 that project.

10 M. GARNER: Okay. So there is no -- is there no
11 -- maybe I should ask it this way: Does it ever
12 happen where the third party contractor provides
13 their estimate of a contingency and then you check
14 it? Or is it always you provide an outline of what
15 the contingency will be? I mean, which way? Does
16 the contractor provide a contingency in their bid?

17 M. SIKSTROM: It depends on the risk allocation
18 between the contractor and the OPG for the specific
19 project. The contractor may carry a contingency for
20 risks that they are responsible for, and OPG will
21 carry contingency for the risks that OPG is
22 responsible for.

23 M. GARNER: Okay. Thank you.

24 If you go to what I just asked you to bring up
25 and you go to page 10 of 31, I believe, of AMPCO-13,
26 Attachment 8. And this is -- it is not the specific
27 I am really interested here, but it was part of what
28 got my thinking about, you know, the issue about

1 contingency and what is not on the record, et cetera.

2 And there -- thank you. You are there.

3 And if you go to the middle column. It is not
4 big enough for me to read on my screen, but I have it
5 on another screen here. And you will see this little
6 chat that says:

7 "Unspent contractor contingency is treated as a
8 savings according --"[as read]

9 Et cetera. Et cetera.

10 And this is from, you know, a review that you
11 have -- a post-review, post-implementation review.
12 And when you read that -- and there are many of these
13 others ones throughout these post-implementation
14 reviews that, in my mind, demonstrate the difference
15 between a contingency that might be done by an OPG
16 project and a contingency that would be done by a
17 third contractor.

18 For instance, in this example, you are talking
19 about an incentive to the contractor to use the
20 contingency, in essence, to monetize more for
21 themselves from that contract. So it seems to me --
22 and you can correct me -- that there is a difference
23 between the way contingencies might be calculated for
24 a third party-run project and a OPG-run project; is
25 that a fair conclusion?

26 M. SIKSTROM: Incentives and the use of
27 contingency does -- is impacted by the contracting
28 arrangements for a specific project. So as I

1 mentioned, there is governance within our project
2 management process that governs how we calculate
3 contingency and how we manage contingency, and that
4 governance is provided in the reference I provided
5 earlier.

6 M. GARNER: Right.

7 M. SIKSTROM: The attachment that you are
8 referring to, it identifies lessons learned to be
9 applied on future projects, and the specific lesson
10 learned, it is just around the contractual behaviour
11 on this particular project to help improve our
12 contracting methodology on future projects.

13 M. GARNER: Yeah, I can see that. And I can
14 also see that it is identifying that contingencies
15 are utilized by a contractor in a way I would have
16 thought -- I don't think you have answered my
17 question. It would be quite different from OPG
18 because I wouldn't think an OPG employee is
19 particularly incentivized to make savings in the same
20 way a contractor is since the contractor is
21 monetizing them and the OPG employee is going home
22 with a pay cheque, so to speak. So it would seem to
23 me it is different.

24 So what I then ask you is has OPG ever studied
25 the difference between the need for its contingency
26 and its projects as between a third party contractor
27 and an OPG-run project? Has it ever studied that --
28 if there is a difference and how it might materialize

1 in different projects?

2 So I am thinking about a broad study -- or, you
3 know, a study that says, over the last year, we did X
4 number of projects ourselves, X number with
5 contractors. The contingencies for us were this way,
6 the contingencies for them, you know, were this way,
7 so we have issues with contracts, or, we don't have
8 issues or, you know, that sort of thing. Have you
9 ever done a study of that nature to see if there is a
10 premium for contingencies on third party contracts?

11 M. SIKSTROM: So the way we manage contingency
12 as outlined in our governance is based on best
13 practice when it comes to project management in the
14 industry.

15 In terms of a broad study, to answer your
16 question, when any project is undertaken, they follow
17 our lessons learned governance which stipulates the
18 examination of past lessons learned for improving
19 projects going forward. So they would review
20 findings like this to consider as they set up their
21 contracting methodology for future projects that may
22 pertain to contingency specifically as the topic that
23 you are bringing up right now.

24 M. GARNER: So you don't know, then, the answer
25 to the question for hydroelectric, whether or not
26 third-party-built projects have either larger -- on
27 average, larger and/or use more contingency than OPG
28 projects of equivalence or, you know, like-type

1 projects? You don't know whether that is a true
2 statement or a false statement or one that can't be
3 ascertained? You don't know that?

4 M. SIKSTROM: I don't think you can make a broad
5 generalization the way that you have framed it.
6 Projects are very unique, and the scope varies
7 specifically from project to project along with the
8 specific contractual arrangement.

9 M. GARNER: Well, I am saying because you
10 haven't studied it, though. That is what I am
11 saying. You are saying that, but you haven't
12 actually studied that. You haven't actually executed
13 a project like that and said, let's see if we can
14 examine this, and that has come back to you and given
15 you that information. I know all projects are
16 different, but no one has tried to study the issue
17 about whether third-party contingencies are different
18 than OPG contingencies? That is all I am looking
19 for. And it sounds like the answer is no; right?

20 M. SIKSTROM: The way we manage contingencies,
21 whether it is on an internal project or as an
22 external project, is the same -- same governance.
23 And, as I mentioned --

24 M. GARNER: Well, it is kind of a "no" or "yes"
25 answer. The answer is, no, you haven't done that
26 study, though? You haven't made a study of it yet?

27 M. SIKSTROM: We haven't done a study the way
28 you described it because such a study is -- we can't

1 make those generalizations amongst all of our
2 projects. They are all very specific, and the
3 contracting arrangements are very unique. And so
4 trying to generalize many of our projects under one
5 study, it wouldn't provide the clear outcomes that
6 you are describing.

7 We do evaluate the performance of our projects,
8 specifically around contingency, as part of our
9 lessons learned project and as part of our lessons
10 learned process on our projects, and we do learn from
11 those lessons learned for future projects. They are
12 considered on other analogous projects.

13 M. GARNER: Okay. Thank you. I think we can
14 argue later about whether you can know something if
15 you haven't studied something. But thank you. I
16 think I understand the state of events.

17 And thank you. That was all of my questions for
18 the Panel. Thank you, Panel.

19 M. MILLAR: Thank you, Mr. Garner. Let's take
20 our morning break and come back at 11:00.

21 --- Recess taken at 10:45 a.m.

22 --- Upon resuming at 11:03 a.m.

23 M. MILLAR: Thanks, everyone. Welcome to the
24 second morning session. I will pass it over to Ms.
25 Grice.

26 **EXAMINATION BY S. GRICE:**

27 S. GRICE: Thank you very much. Good morning,
28 Panel. I am Shelley Grice, and I am the consultant

1 for AMPCO.

2 So my first question is related to A1-AMPCO-3.
3 In this interrogatory, we asked for OPG to provide a
4 list and summary of all third-party reviews,
5 assessments, or audits undertaken over the past five
6 years related to material aspects of OPG's business.
7 And in the response, OPG provides in Chart 1 a list
8 of -- I believe there are six reports provided there,
9 and I would like to ask if OPG could please provide
10 copies of those reports.

11 D. COBAN: Yes, we can do that, of course,
12 subject to --

13 M. MILLAR: That is JT-2.5.

14 **UNDERTAKING JT-2.5: PROVIDE COPIES OF THE SIX**
15 **REPORTS PROVIDED IN CHART 1 OF THE RESPONSE TO**
16 **A1-AMPCO-3**

17 S. GRICE: Okay. Thank you.

18 I just want to follow up on a discussion that
19 was had yesterday and today regarding the value
20 framework. And essentially, I am just going to
21 summarize what I think was established, and you can
22 correct me if I am wrong. But the value framework is
23 applied to capital and OM&A unallocated investments.
24 It is applied separately to nuclear, renewable
25 generation, and support services. It quantifies the
26 value of the projects based on the summation of
27 benefits for each investment.

28 And then in AMPCO-22, you provided a list of

1 projects in Attachment 1 that are capital-related and
2 in Attachment 2 that are OM&A-related, and all of
3 those projects are included in the business plan.

4 Have I summarized that correctly?

5 M. SIKSTROM: That is correct.

6 S. GRICE: Okay. Now, in that discussion, Mr.
7 Rubenstein asked if OPG could provide the master list
8 of all of the unallocated projects, so not just those
9 in attachments 1 and 2, and OPG declined to provide
10 that information. And I was just thinking about it,
11 and I was wondering, would OPG be willing to provide
12 not the project list but the number of projects and
13 the value of the total projects that are on that
14 larger master list? Is that something that you could
15 provide and split between capital and OM&A?

16 D. COBAN: No, Ms. Grice. As we said to Mr.
17 Rubenstein yesterday, it is our view that any
18 projects that are not included in the application are
19 not relevant. So we are not able to provide that.

20 S. GRICE: Okay. So that is a refusal?

21 D. COBAN: Yes.

22 S. GRICE: Okay. If we can go to AMPCO-22,
23 please. I just want to follow up on Footnote 1,
24 which is on page 2 of the response. So it says here
25 that:

26 "In addition, each business unit may prescreen
27 certain candidate investments prior to applying the
28 value framework, and this prescreening involves the

1 application of professional judgement, appraisal of
2 risks reflected within the value framework, and
3 consideration of various factors, including estimated
4 investment cost, resource availability, and other
5 implementation constraints."[as read]

6 So then when you -- I guess I want to
7 understand. When you run your value framework and
8 you put the projects into Copperleaf, are any that
9 are prescreened -- are they included; not included?
10 Can you just speak to that a little bit?

11 M. SIKSTROM: So as I talked to Mr. Rubenstein
12 yesterday, we work with our engineering and
13 operations group to identify investments that are
14 required to address condition of our assets as well
15 as mitigate risk. And those identified investments
16 are then added into our Copperleaf to be evaluated
17 through our value framework.

18 S. GRICE: Okay. So even though they are
19 prescreened, they still -- all the projects go into
20 Copperleaf?

21 M. SIKSTROM: We put all of our projects into
22 Copperleaf.

23 S. GRICE: Okay. Okay. Thank you.

24 And then we have talked about that the value
25 framework applies separately to nuclear, renewable
26 generation, and support services. At any point does
27 OPG review all of the unallocated projects together
28 and prioritize spending? I understand that you apply

1 the value framework to each area independently, but
2 at any point, do you, you know, look at the totality
3 of all of those unallocated projects and do any
4 further prioritization?

5 D. COBAN: And just to be clear, Ms. Grice, for
6 ourselves and for the record, you are asking the
7 Panel to comment on the way in which the value
8 framework might compare projects across both nuclear
9 and hydro? Did I understand that correctly?

10 S. GRICE: Yes.

11 D. COBAN: Okay. Thank you.

12 M. SIKSTROM: We don't use a value framework to
13 compare it against the renewable generation or in the
14 nuclear business, as an example. The value framework
15 and the prioritization process that I am speaking to
16 is just for the hydroelectric business.

17 S. GRICE: Okay. Thank you. And then if we can
18 -- oh, I -- sorry. I just have one more question.

19 With the projects that are in Attachment 1, and
20 you show the net benefit score for each project, do
21 you apply a threshold that limits the projects,
22 meaning they have to meet a threshold in order to
23 make it onto the table? Is there any kind of
24 constraint like that?

25 M. SIKSTROM: I think the only type of
26 constraint you might have is, constraints aside,
27 whether it is environmental or -- or weather-
28 dependent, as Mr. Pender was talking about earlier,

1 logically, you would want a positive net value to
2 have a project added to this table.

3 With that being said, if there would be a
4 regulatory project of some kind, as an example, it
5 could show up on this table if it is required to
6 address certain conditions.

7 S. GRICE: Okay. So it is just in terms of your
8 planning, that is not something that you do; you
9 don't apply a threshold?

10 M. SIKSTROM: No, there isn't a threshold. The
11 projects that are included here in our unallocated
12 portfolio, all these projects are here because they
13 are necessary for us to address asset condition or
14 risk -- some form of risk related to our assets. So
15 we feel that all of these projects are necessary for
16 us to maintain our ability to effectively generate
17 power reliably, safely, and so on and so forth.

18 So there isn't any net benefit score threshold,
19 per se, other than, you know, being positive, as I
20 mentioned earlier, subject to all the other
21 constraints that we have talked about.

22 S. GRICE: Okay. Thank you.

23 I just have a follow-up question to AMPCO-23.
24 And I just want to go a little bit deeper on -- so I
25 am on page 3 under "funding considerations." And you
26 talk about the planned project expenditure levels can
27 be influenced by financial capacity and ability to
28 align resource funding sources, and then you say that

1 this considers such factors as the level and pacing
2 of investments.

3 So I just want to make sure I characterize this
4 properly. So I think you said yesterday that any
5 allocated hydroelectric capital or OM&A project that
6 has a business case makes it into the budget. So
7 then that leaves the unallocated portion of the
8 budget that I want to ask whether or not, when you do
9 your Copperleaf, if you actually -- if you put in a
10 funding constraint into that model and how -- and
11 then if you do, then -- and how you look at the
12 pacing of investment. So I just want to specifically
13 talk about the unallocated projects.

14 N. PENDER: So I think, as we referred to
15 earlier this morning, we talked about asset
16 condition, and then we talked about do-ability or
17 achievability of the plan, I think was the wording I
18 used this morning. And so we are building our plan
19 bottom-up, and so the buildup of the bottom-up plan
20 for us is to sustain reliable assets over the long
21 term. That is our objective as the hydro business
22 line. When we draw a distinction between, let's call
23 it, allocated and unallocated projects, we gave a
24 description yesterday that where they are allocated,
25 they have a business -- business case summary. And
26 then we have those unallocated projects which have
27 not achieved a business case summary.

28 So I wanted to correct the -- kind of the mode

1 of thinking because we do BCSs, let's call it -- I
2 don't know -- 24 months out, something like this, and
3 we are looking for a larger funding window under this
4 application. So a lot of these unallocated projects,
5 they might seem like they are -- whilst they don't
6 have a BCS, they have a lot of commonality with the
7 allocated projects. And so if we went to maybe --
8 let's go to D1-1-2, Table 5.

9 What we see in there is there is a lot of
10 commonality between what has been allocated and what
11 is unallocated, and it is -- I don't want to say
12 "rinse and repeat" because that is too much of a
13 globalization, but it is repeat of similar types of
14 work over other units, and I think that is a really
15 important -- really important distinction. Table 5,
16 please. 5. Yeah, let's start with 5 -- 5A, if you
17 can make it slightly bigger. Just -- there we are.
18 Thank you.

19 So let's take -- I mean, we could take any one
20 of these projects. If we look in the category, they
21 are all called "sustaining." So Abitibi Canyon is a
22 multiple-unit station, and we have unallocated
23 projects in here, G3 and G4. If we go down to lines
24 6 and 7, we have unallocated projects for G15 and 16
25 at Sir Adam Beck and G26 and 25.

26 So in the context of, let's take Beck, a 16-unit
27 station, we might have 2 unit pairs as allocated and
28 6 unit pairs, so 12 units as unallocated.

1 Fundamentally, we are doing very similar work,
2 subject to the condition of the asset, because they
3 are treated individually. But in -- if we were
4 globalizing, we would say that is rinse and repeat of
5 similar type of work. So if we understand the
6 premise for doing the first unit, that means the same
7 premise follows to the last unit.

8 If we just kind of scan through this list, I can
9 make similar arguments, if we could just go down a
10 couple of lines, please. Okay. A project we have
11 talked lots about, line 17, Otter Rapids. We spent a
12 good amount of time talking about the motivation for
13 this project. Line 17 and 18 in here, we have a G3,
14 G4 capital upgrade. Again, line 22, RH Saunders.
15 G10, G11, lines 23, 24.

16 So my point of drawing these out is I think
17 about the portfolio of individual projects. Whilst
18 they might not have a BCS, it is very similar in
19 nature to the preceding units we are doing. And we
20 established on record yesterday, there was a question
21 from OEB Staff around when does this program start
22 and when does it finish. In nature, it is cyclical,
23 and so there are higher periods of work and lesser
24 periods of work.

25 This unallocated portfolio, for us, is
26 absolutely essential to sustaining the stations, and
27 all we are drawing a distinction is between the
28 projects which are close -- are coming close to

1 execution and those which are for forward execution.
2 So absent this unallocated portfolio, we can't
3 achieve the outcome that we are looking to do to
4 sustain these assets to give the reliability the
5 province is looking for. So I just wanted to make
6 sure that was a clear perspective walking into it.

7 S. GRICE: Okay. Thank you. No, I appreciate
8 that. And I am not suggesting that the work isn't
9 necessary or doesn't need to be done, but I guess I
10 was more thinking of when we are in other utility
11 applications that use Copperleaf, they sometimes put
12 in a financial constraint. So, you know, all of the
13 work needs to get done; there is no question about
14 that. It is just a question of when.

15 So I just wanted to make sure -- it sounds like
16 you don't put in a financial constraint into
17 Copperleaf to say, in this five-year period, we can
18 only do X. For a whole host of reasons. You know,
19 there is a lot of work going on in other areas.

20 N. PENDER: I wouldn't characterize that
21 generalization. So as explained, we built bottom-up.
22 That is -- so my objective as the line is to deliver
23 as a reliable a product as possible over the midterm,
24 but we are always conscious of impacts on total
25 customer cost, what that means to the business. And
26 we will hear from Panel 4 later on how that -- how
27 that -- how that is utilized.

28 But we are building our business bottom-up to

1 really reflect what the province is asking of us.
2 And that ask, in our context, is we translate that
3 into 1,500 megawatts, sustain that, add 50 of
4 incremental megawatts, and add 15 megawatts from
5 redevelopments. That is our articulation of the
6 strategic direction of the province.

7 But you are right; we do rethink about that from
8 a cost perspective. So I didn't want you to walk
9 away thinking, oh, we just put all we can in. No,
10 no. We are considered in how we approach it. We
11 consider it from a financial perspective. We
12 consider it from the needs of the asset. But we also
13 reflect executability. As we had spoken to your
14 colleague earlier on this morning, there is a real --
15 there is a real reflection on what is achievable in
16 these 54 stations spread across a large geography.
17 Those are all constraints which set the nature of our
18 plan.

19 S. GRICE: Thank you.

20 M. RUBENSTEIN: Sorry, could I just ask a
21 follow-up question just to make sure I understand.

22 **EXAMINATION BY M. RUBENSTEIN:**

23 M. RUBENSTEIN: Do you run the prioritization
24 process annually, or is it just at the start of the
25 business planning cycle that is for this application?
26 So in 2026 will you run it again?

27 M. SIKSTROM: Yes.

28 M. RUBENSTEIN: And when you do that, do you put

1 in a financial constraint? My understanding is the
2 program allows you to -- like, you literally can put
3 in a financial constraint, either at a one-year level
4 or multiple years, right. My understanding,
5 Copperleaf also is a optimization tool, not just a
6 prioritization tool. Do you do that?

7 M. SIKSTROM: Yeah, we do use the optimization
8 function within Copperleaf to help us figure out the
9 prioritization for our potential investments. And
10 subject to check, I do believe we put in a constraint
11 to assist with that optimization process.

12 M. RUBENSTEIN: Is the constraint that you will
13 put in, let's say, in 2027 the approved amounts in
14 this application?

15 S. ZADEH: Sorry. Would it be helpful to take
16 an undertaking here? Because I see there is lots of
17 questions, and perhaps in that undertaking, we can
18 speak to the selection or the buildup of the
19 unallocated projects for hydro and then the
20 associated funding constraints, how they play in.
21 Can we take that as an undertaking? Okay.

22 M. MILLAR: That is JT-2.6.

23 S. GRICE: Okay. Thank you.

24 **UNDERTAKING JT-2.6: ADVISE AS TO THE SELECTION**
25 **OR THE BUILDUP OF THE UNALLOCATED PROJECTS FOR**
26 **HYDRO AND HOW THE ASSOCIATED FUNDING CONSTRAINTS**
27 **PLAY IN**
28 **EXAMINATION BY S. GRICE:**

1 S. GRICE: I would like to go to AMPCO-15,
2 Attachment 6, please. So this is an internal audit
3 that was done of the renewable generation turbine
4 generator refurbishment program dated October 24th,
5 2025, with a rating of "generally effective." And I
6 want to talk about this audit because it has -- it
7 talks about Copperleaf in the audit.

8 So if we can please go to page 1. And at the
9 bottom of page 1, it says:

10 "The objective of this audit was to test the
11 design and operating effectiveness of controls and
12 processes related to the planning and execution of
13 the renewable generation refurbishment program." [as
14 read]

15 And then if we go to the next page, page 3, it
16 shows the conclusion -- the conclusions that include
17 four findings. So I just want to talk about the
18 first finding which has a risk rating of "moderate."
19 And it says:

20 "Quantitative factors, including asset
21 investment net value, were not initially incorporated
22 into the C55 project prioritization process for
23 refurbishment projects in the 2025 to 2031 business
24 plan. The rationale for project prioritization and
25 subsequent adjustments was not documented." [as read]

26 And then if we just get into the details of that
27 on page 5. So it talks at the top that Copperleaf
28 was the software used by the asset management and

1 supports the optimization of investment decisions.
2 And then if we get into the middle of that finding,
3 it says:

4 "Internal audit noted that quantitative factors
5 outlined in the value framework in C55 were not
6 utilized to evaluate and prioritize the projects
7 within the 2025-2031 business plan. Management
8 indicated that the asset investment network --"[as
9 read]

10 Oh, jeez. Sorry. I have lost what the acronym
11 stands for:

12 "-- the asset investment net value was not
13 initially used to prioritize the refurbishment
14 projects due to the timing of the implementation of
15 C55 relative to the development of the preliminary
16 project listing in the business plan and that they
17 were manually prioritized outside of C55."[as read]

18 And then the next paragraph says that:

19 "Internal audit obtained a spreadsheet of the
20 refurbishment projects in the 2025 to 2031 business
21 plan and noted that all 74 refurbishment projects
22 were classified as 'must do' since the value
23 framework was not applied to them."[as read]

24 So I just have a couple questions just about
25 this finding.

26 So the first one. When it says that --
27 management's perspective, that it may have been due
28 to the timing of the implementation of C55. So when

1 was C55 implemented by OPG?

2 M. SIKSTROM: For the RG hydro business, we
3 began valuing products in C55 -- or investments,
4 rather, in C55 in 2023.

5 S. GRICE: So this was not the first time that
6 the value framework had been used?

7 M. SIKSTROM: What do you mean by "first time"?

8 S. GRICE: Well, I am just -- I just want to
9 understand how the timing of the implementation of
10 C55 then would impact this list of projects for 2025
11 to 2031.

12 M. SIKSTROM: So this audit, as it says on page
13 1, spans the time period from January 1st, 2024, to
14 June 30th, 2025, and we began valuing investments in
15 2023 --

16 S. GRICE: Okay.

17 M. SIKSTROM: -- early 2024. Some potential
18 investments may still have been transitioning into
19 Copperleaf.

20 S. GRICE: Okay. Okay. Thank you.

21 And then in terms of the 74 refurb projects, do
22 you know what the total value of those projects is?

23 M. SIKSTROM: I don't have that in front of me
24 right now.

25 S. GRICE: Could you provide that for us?

26 D. COBAN: Ms. Grice, can you just repeat the
27 question for all of us? We are having a quick chat
28 here in the background to consider your request, but

1 I just want to make sure that we have got the
2 question clearly set out.

3 S. GRICE: Sure, sure. I actually thought about
4 it a little further, I am sorry, while you were
5 conversing. Would it be possible for you to provide
6 the spreadsheet of the refurbishment projects, the 74
7 that are mentioned here in this audit?

8 D. COBAN: So it is my understanding that the 74
9 projects includes assets that are not prescribed, so
10 we wouldn't be able to provide it at that form.

11 S. GRICE: Would you be able to provide it just
12 for the regulated assets, a subset?

13 N. PENDER: Yeah, we could provide a relevant
14 subset in the rate period for regulated assets, yes.

15 S. GRICE: Okay, thank you.

16 M. MILLAR: So that is JT-2.7. And could the
17 witness just repeat what you are undertaking to do?

18 M. SIKSTROM: Ms. Grice, I think I understand
19 the undertaking to be you would like a list of the
20 refurbishment projects and their value, their project
21 cost?

22 S. GRICE: Yes, that were part of this
23 spreadsheet that the internal auditor looked at.

24 M. SIKSTROM: Okay. Okay. We will take that --
25 we will take that away on a best-efforts basis just
26 because I will have to figure out what was listed on
27 that spreadsheet.

28 S. GRICE: Okay. Thank you.

1 **UNDERTAKING JT-2.7: PROVIDE A LIST OF THE**
2 **REFURBISHMENT PROJECTS THAT ARE INCLUDED IN THE**
3 **PLAN THAT WERE PART OF THE SPREADSHEET THE**
4 **INTERNAL AUDITOR LOOKED AT AND THEIR PROJECT**
5 **COST**

6 S. GRICE: And then I am just trying to
7 understand, then, just in terms of the findings, were
8 these projects -- at the end of the day, are they
9 part of the 2025 to 2031 business plan?

10 M. SIKSTROM: There are a number of
11 refurbishment projects that are included in our
12 unallocated portfolio that are part of this business
13 plan.

14 S. GRICE: So would you be able to, as part of
15 the spreadsheet, identify those projects are that are
16 included in your business plan?

17 D. COBAN: Maybe just as a point of
18 clarification on the undertaking that we agreed to
19 provide, we are only providing the projects that are
20 included in the plan because those are the ones that
21 are relevant for our previous exchange.

22 S. GRICE: Okay. Okay.

23 And then I just want -- I just want to take you
24 to the very last paragraph of this page, and it says:

25 "Internal audit confirmed that management
26 subsequently completed an assessment of condition,
27 risk, and cost (i.e. the value framework) of the 74
28 projects within C55 via the creation of a Gap,

1 Driver, Action, Results document, with monthly
2 updates provided to the leadership team. And
3 internal audit noted that the GDAR has been closed in
4 all 74 refurbishments, displaying a positive value
5 within C55."[as read]

6 So can you just explain to me what happened
7 here? I just don't quite understand the ending of
8 this sort of story.

9 M. SIKSTROM: So as I mentioned earlier, in 2023
10 and going into 2024, we are -- we as a RG business
11 were transitioning all of our investments into
12 Copperleaf. So initially, the refurbs that were
13 mentioned here that you pointed out earlier did not
14 have a complete AINV score, but as part of the audit
15 closeout, the AINV scoring was complete.

16 S. GRICE: Okay. And then -- thank you.

17 And then just in terms of management action
18 plans, where it says that:

19 "Management will document the output for the
20 rationale of the prioritization, validation, and
21 investment made to the project listing in the 2025 to
22 2031 business plan. The target completion date is
23 Feb 18, 2026."[as read]

24 Has that been done?

25 N. PENDER: It has.

26 S. GRICE: Okay. Thank you.

27 And then there are just a couple of -- if we can
28 please go back to page 1. There were just a couple

1 of documents referenced in the audit that I wondered
2 if we could get a copy of, and the first one is the
3 RG overhaul program which is RG-PROG-MA-006. Could
4 we get a copy of that?

5 N. PENDER: That was the subject of conversation
6 this morning with your colleague, and we would be
7 delighted to provide it as well.

8 S. GRICE: Okay.

9 M. MILLAR: Was that already marked? Okay.

10 S. GRICE: Okay. Thank you.

11 And then this may already be on the record too,
12 but you mention down at the bottom under "objective
13 and scope" that:

14 "Operating effectiveness of controls and
15 processes implemented to address the findings from
16 the 2022 renewable generation TG overhaul program
17 audit were also assessed." [as read]

18 Is that audit on the record?

19 N. PENDER: That was the much talked about audit
20 this morning where we were jumping backwards and
21 forwards. So I wish we had spoken earlier to bring
22 this forward.

23 S. GRICE: Okay. Thank you. I just wanted to
24 make sure that that -- we are talking about the same
25 thing.

26 N. PENDER: We are.

27 S. GRICE: Okay. That is great. Thank you.

28 Okay. My next question is AMPCO-13. Actually,

1 if we could -- in AMPCO-13, if we could go to the
2 spreadsheet. It just might help. I just have some
3 just clarification questions on AMPCO-13, Attachment
4 1.

5 Okay. I understand from the response that only
6 projects that are active have an SPI and a CPI core;
7 is that correct?

8 M. SIKSTROM: Yeah, that is correct. We
9 wouldn't have CPIs or SPIs for investments. It is
10 only for projects.

11 S. GRICE: Okay. Only for projects. Okay. But
12 the projects have to be ongoing. They are not --
13 they are not -- there is no SPI score for a completed
14 project?

15 M. SIKSTROM: Yes, that is correct. They are
16 only for active projects, to help us track progress.

17 S. GRICE: Okay. So I just want to understand
18 what this means. So if we go to line 25, which I
19 believe is Project 89354, it has an SPI score of
20 0.86. I just want to make -- yes. Okay. And then
21 the one below it is 0.77 and then 0.44.

22 And I believe I read in the evidence that OPG
23 likes to see the scores within a range of 0.95 to
24 1.10?

25 M. SIKSTROM: That is correct.

26 S. GRICE: Okay. So when you have these
27 projects in this table with an SPI score that is
28 outside of that range, what do I take from that?

1 Does that mean the project requires a recovery plan
2 to get it back on track? How does OPG manage the
3 projects? What is the action that is undertaken with
4 projects with scores, like, say, the surge tank
5 replacement in Silver Falls with 0.44?

6 M. SIKSTROM: Yes. The action the project team
7 would take would be to work to remediate that to get
8 the project back within the range that you mentioned
9 earlier.

10 S. GRICE: Okay. So if we were to get this
11 table two months from now, the scores would all be
12 different for these projects?

13 M. SIKSTROM: Potentially, yes. As the projects
14 progress, their CPI and their SPI adjust.

15 S. GRICE: Okay. Okay. Thank you. I just
16 wanted to clarify the understanding of the table.
17 Okay.

18 If we go to AMPCO-13, Attachment 4. And this is
19 just a sample that I grabbed just to clarify the use
20 of the plot project close-out report. So it says in
21 this particular one-- this is for Project Number
22 83155, which is Abitibi G2 capital upgrade. And it
23 says that the PCR is also used as the post-
24 implementation review. So I just want to go down to
25 the bottom of page 1 where it has the original
26 approved estimate and then the final actuals, and
27 then it says that the project was 12 weeks ahead of
28 schedule.

1 So I went into your evidence and looked at Tab
2 12, which is in D1-1-2, Attachment 1. And I don't
3 know that we need to pull it up, but essentially -- I
4 mean, essentially, the business case there shows a
5 project cost of 37.1 million and a scheduled in-
6 service date of May 2021, which would then mean that
7 the project was behind schedule.

8 So I am just trying to understand -- and I think
9 Ms. Scott sort of talked about this yesterday with
10 another project close-out report. I am just trying
11 to understand why the original business case summary
12 amount is not captured in the -- the amount in the
13 schedule in-service date is not captured in the
14 project close-out report, especially if it serves as
15 a post-implementation review where, I believe,
16 lessons learned are to be captured. You kind of lose
17 the thread of the story of the project if the
18 original approved estimate doesn't reflect the first
19 executed business case.

20 N. PENDER: Could you just give me the reference
21 for the other document you referred to.

22 S. GRICE: Sure. It was D1-1-2, Attachment 1,
23 Tab 12. I believe it is on page 8 where you see the
24 -- oh, there it is, right there -- oh, no. So that
25 is where it shows a total of 37.055 million for this
26 project.

27 N. PENDER: Ms. Grice, we will take an action
28 just to verify the distinction you have drawn out

1 between the PCR and D1-1-2, Tab 12, Project 83155
2 where we draw out the release of 35 million,
3 including 8 million of contingency. We will just
4 verify -- we will reconcile the difference between
5 those two reports, as you draw out.

6 S. GRICE: Okay. And would you mind, in the
7 response too, just to clarify what is intended to be
8 captured in the project close-out report with respect
9 to the original approved estimate cost and schedule?

10 N. PENDER: We can confirm that as well, yes.

11 S. GRICE: Okay. Thank you.

12 M. MILLAR: Okay. That is JT-2.8. What is the
13 full undertaking?

14 N. PENDER: Can we just confirm the back part of
15 the question just to make sure you and I are aligned
16 on what we are doing with regards to cost and
17 schedule in the PIR -- or PCR? Sorry.

18 S. GRICE: So I think you were going to clarify
19 the values in Tab 12 -- D1-1-2, Tab 12, related to
20 this project compared to what is being shown in the
21 project close-out report with respect to original
22 improved estimate cost and schedule.

23 N. PENDER: Yes, we can do that.

24 S. GRICE: I am sorry. And then the second
25 part, which is to clarify in the project close-out
26 report what the intent is with respect to original
27 approved estimate.

28 N. PENDER: Yes. We will refer to our procedure

1 to what it should define and what should be included
2 in there.

3 S. GRICE: Okay. Thank you.

4 **UNDERTAKING JT-2.8: CLARIFY THE VALUES IN D1-1-**
5 **2, TAB 12, FOR THIS PROJECT COMPARED TO THE**
6 **PROJECT CLOSE-OUT REPORT WITH RESPECT TO THE**
7 **ORIGINAL IMPROVED ESTIMATE COST AND SCHEDULE AND**
8 **CLARIFY THE INTENT OF "ORIGINAL APPROVED**
9 **ESTIMATE" IN THE PROJECT CLOSE-OUT REPORT**

10 S. GRICE: And just one last question on this
11 one because I saw a couple of others like this. So
12 my understanding is this project close-out report --
13 bear with me -- I believe it is dated April 4th,
14 2025, so that is three years -- approximately three
15 years after the project was finalized. And then it
16 says "reason for late submission," and this is on the
17 bottom of page 1. It says there were punch list
18 items required an outage in order to complete. The
19 outage was approved for the fall of 2024, and the
20 final change order was processed January 2025 and the
21 final invoice paid out to February 2025. What do you
22 mean when you say "punch list items," and how did
23 that impact the completion of the project?

24 M. SIKSTROM: So our post-implementation reviews
25 need to be -- are supposed to be completed within one
26 year of the project being closed out, although for
27 this particular project, the in-service date had in
28 2022. The project wasn't closed out, if I read the

1 bottom box correctly, until February -- or around
2 February 2025. So as part of our projects, we do --
3 as part of the close-out of projects, we may in-
4 service an asset and still have certain outstanding
5 items that a contractor might need to address that we
6 call "punch items."

7 And some of these could be painting a handrail
8 or some other non-impactive work directly with the
9 generation of power. And so we can't close the
10 project out until all those punch lists are complete.
11 And so in this case, the punch lists took a little
12 bit longer to complete, hence the delay in completing
13 the PIR until a couple years after the in-service
14 date.

15 S. GRICE: Okay. And then are the costs to do
16 that, the punch list items -- is that included in the
17 30 million, the final actual?

18 M. SIKSTROM: Punch list activities are included
19 with the overall project cost, and they would be
20 included in that \$30 million. But we will reconcile
21 -- as part of our earlier undertaking, we can confirm
22 that just in relation to the business case summary
23 that we talked to earlier.

24 S. GRICE: Okay. Thank you.

25 Okay. Next question is AMPCO-14. Okay. We
26 asked in AMPCO-14 for OPG to fill out an Excel
27 spreadsheet, and so the spreadsheet was for projects
28 related to Table 2A and 2B of D1-1-2, and that

1 includes projects that are 10 million to 30 million.
2 And we don't need to pull it up, but I just observed
3 that there were a few projects that had a cost
4 variance of greater than 20 percent based on the
5 information in the table.

6 So my understanding is that in terms of what is
7 on the record related to those projects, we don't
8 have business cases. We don't have superseding
9 business cases. We don't have project over variance
10 reports. PCI -- PCRs or PIRs, post-implementation
11 reviews, would OPG be willing to provide those
12 documents, those live documents I mentioned, for the
13 projects on that table that have a cost variance of
14 greater than 20 percent?

15 D. COBAN: We can take an undertaking to
16 consider that request, Ms. Grice, and if we can
17 provide the information, we will; and if not, we will
18 set out some reasons as to why not.

19 S. GRICE: Okay. Thank you.

20 M. MILLAR: That is JT-2.9.

21 **UNDERTAKING JT-2.9: PROVIDE THE LIVE DOCUMENTS**
22 **IN REGARDS TO THE PROJECTS ON TABLE 2A AND 2B OF**
23 **D1-1-2 THAT HAVE A COST VARIANCE OF GREATER THAN**
24 **20 PERCENT**

25 S. GRICE: Okay. I just have a question now on
26 AMPCO-15, audit number -- Attachment Number 5. So
27 this is an audit of small hydroelectric developments.
28 It is dated June 23rd, 2025. It is generally

1 effective. The objective of the audit, if you look
2 at the bottom of page 1, was to assess whether
3 processes and controls are designed and operating
4 effectively to ensure HALO projects in execution are
5 completed on time and within budget.

6 And if we just go up earlier on page 1, it
7 defines "HALO" as the hydroelectric assessment, life
8 extension, and optimization program. So I wanted to
9 ask, similar to what you are providing on the
10 refurbishment document that governs that program,
11 would you be able to provide a copy of the HALO --
12 the document that governs the HALO program?

13 M. SIKSTROM: Yeah, we can take an undertaking
14 to provide that document for you.

15 S. GRICE: Okay.

16 M. MILLAR: JT-2.10.

17 **UNDERTAKING JT-2.10: PROVIDE A COPY OF THE**
18 **DOCUMENT THAT GOVERNS THE HALO PROGRAM AND**
19 **PROVIDE THE HALO PROGRAM CHARTER**

20 S. GRICE: Thank you.

21 And then a little -- down a little bit further,
22 it says -- it references the HALO program charter.
23 As part of the same undertaking, would you be willing
24 to provide the HALO program charter?

25 M. SIKSTROM: Yes, we can provide the program
26 charter as well.

27 S. GRICE: Okay. Thank you. So that will be
28 part of the same undertaking.

1 And then with respect to all of the findings
2 that are listed on pages 4 and 5, there are sort of
3 four observations with management action plans. Can
4 you just confirm they have all been completed? Well,
5 the last one says "completed." My apologies. So the
6 three earlier ones.

7 M. SIKSTROM: This is still in relation to
8 Attachment 5?

9 S. GRICE: Yes.

10 M. SIKSTROM: Yes, all the actions have been
11 complete, I can confirm.

12 S. GRICE: Okay. Thank you. I am getting near
13 the end, just so you know. Okay.

14 AMPCO-16, please. So in AMPCO-16, we asked for
15 OPG in part C to provide all the change control forms
16 that correspond to a set of categories -- estimate,
17 execution, performance, front-end planning, project
18 management, and resources -- and those categories
19 were part of OPG's project-integrated change control
20 document that was live in the [indiscernible] 0290.
21 And the change control forms that we asked for were
22 specifically related to five projects that OPG had
23 identified with cost variances greater than 10
24 percent.

25 So in -- in the response to part C, we got a
26 list in Chart 3 of change control forms. And then in
27 the response, OPG noted that the categories of change
28 control forms referenced in the interrogatory are no

1 longer applicable under the current project
2 governance model. And you also say that you have
3 provided the ten largest change control forms related
4 to the relevant projects.

5 So I just want -- I just want to understand what
6 we got here. Did -- are they -- are they here
7 because they are the largest, or are they here
8 because you applied the new -- sorry. I should --
9 let me rephrase that.

10 Are they here because they are the largest?
11 I will just ask that first. Or is there some other
12 thing that you applied to put these on the list?

13 M. SIKSTROM: These are the largest CCFs for the
14 applicable projects that we identified in part A.

15 S. GRICE: Okay. So you didn't take the
16 categories that I provided and then map that to your
17 new -- you have got a new document, my understanding
18 is, for project-integrated change control, and you
19 provide that at D2-AMPCO-33, Attachment Number 12.
20 So I just want to make sure I am understanding the
21 change control forms that you provided. So you
22 didn't go and map the categories that were mentioned
23 in that interrogatory over to the new -- the new
24 categories in your new document?

25 M. SIKSTROM: I believe we just gave the ten
26 largest dollar value CCFs.

27 S. GRICE: So can we just quickly go to AMPCO-
28 33. This is Attachment 12. And I believe it is -- I

1 believe it is the last page shows the new categories.
2 So I guess my question is if you were to apply the
3 project-directed change and not-directed change
4 categories that are now shown on this -- in this new
5 document, would you provide -- would I get a
6 different set of change control forms? Like, is it
7 possible that there is something else that exists
8 that would relate to those categories?

9 M. SIKSTROM: Are you looking for particular
10 changes specific to a certain category here? I think
11 we provided you the ten largest because that seemed
12 to be the thrust of the question.

13 S. GRICE: Well, except that I gave -- I gave
14 categories in the question that related to the old
15 document. And so now you have this new document, so,
16 to be honest, most of the categories under project-
17 directed change and non-directed change seem to
18 apply.

19 So I guess by way of undertaking, could you just
20 have another look and see if there is anything
21 related to the new change categories that would
22 produce any additional change control forms?

23 D. COBAN: Ms. Grice, I think I am struggling
24 with the question because what I understood and what
25 we see in the IR is that the categories did not
26 define the production of the information; it was,
27 rather, the materiality of those CCFs. And we
28 provided the ten largest ones. So I am a bit

1 unclear. I feel like we are missing each other as to
2 the framework that was applied to the response.

3 S. GRICE: Okay. Okay.

4 So if I look at part C to the question and I
5 reference Reference Number 2, which is the project-
6 integrated change control document that was part of
7 EB-2020-0290, pages 14 and 15. If you go there,
8 there is a chart that has two pages worth of change
9 control reasons, and I picked a subset of those in
10 mentioning in part C that I was asking for all change
11 control forms that correspond to the following change
12 control categories that are referenced in part 2, so
13 it was a specific subset.

14 And so now -- now I have the ten largest, and it
15 may be that they are -- that they are the same thing.
16 Like, those ten capture those categories. But I just
17 -- I am just asking to see if there is anything else,
18 like, if you could go back and take another look and
19 see if -- if the new categories in the new document
20 that govern your project management, if there is
21 anything additional that is captured under those
22 categories? Did I explain?

23 D. COBAN: Just give me one moment. Sorry.

24 S. GRICE: Sure.

25 D. COBAN: So we can agree to take another look.
26 And if I understand correctly, you are really looking
27 to understand the new categories?

28 S. GRICE: Yes.

1 D. COBAN: Right. So we can take that away to
2 consider it in terms of providing you additional
3 clarification on those new categories relative to the
4 CCFs that you have in front of you.

5 S. GRICE: Okay. And if you see a CCF that fits
6 those categories that is relevant to these five
7 projects, could you provide it?

8 D. COBAN: No. So we are still going to only
9 provide you the top 10 in terms of materiality, but
10 we can give you some -- we will consider if we can
11 give you some more clarity on the categorization of
12 those 10 within the new --

13 S. GRICE: Okay. Okay. That is great. Thank
14 you.

15 M. MILLAR: This is an undertaking, Ms. Coban?

16 D. COBAN: Yes.

17 M. MILLAR: Okay. JT-2.11.

18 S. GRICE: Okay. Thank you.

19 **UNDERTAKING JT-2.11: PROVIDE ADDITIONAL**
20 **CLARIFICATION ON THE NEW CHANGE CONTROL FORM**
21 **CATEGORIES RELATIVE TO THE CHANGE CONTROL FORMS**
22 **PROVIDED IN D1-AMPCO-016**

23 S. GRICE: I just have one more question. And
24 this is F1-AMPCO-102.

25 Okay. So in this interrogatory, we asked for
26 the status of completion dates for specific projects.
27 These are OM&A projects. And you provided completion
28 status list in the chart on -- in Attachment 1. So I

1 just wanted to understand the variance explanation
2 part.

3 So you say here that you -- let's just look at
4 the -- let's look at Project 86078, which is BAR-1
5 mechanical/electrical overhaul. So you say that the
6 completion status is late, the project is closed, and
7 that, in turn, is delaying the project closeout
8 report. So I just wanted to clarify. So does OPG
9 apply the same project closeout reports to OM&A
10 projects? Is it the same process, same form?

11 M. SIKSTROM: Yes, that is correct.

12 S. GRICE: Okay. And are they again to be done
13 within a one-year time frame?

14 M. SIKSTROM: Subject to check, I believe that
15 is correct.

16 S. GRICE: Okay. Okay. Thank you. I just
17 wanted to understand and confirm that they were also
18 applied to OM&A projects.

19 Okay. Those are all my -- oops, hang on.

20 Okay. Thank you, those are our questions.

21 Thank you.

22 M. MILLAR: Thank you, Ms. Grice.

23 We are right about noon, so we will take our
24 lunch break. We are returning with --

25 D. COBAN: Sorry, Mr. Millar, we, I think, have
26 one matter to resolve from this morning with -- or
27 maybe two with Mr. Buonarguro.

28 M. MILLAR: Sure.

1 M. BUONARGURO: Yeah, I was going to pipe in
2 just in case we can let the Panel go before lunch as
3 opposed to after.

4 D. COBAN: We prefer that.

5 M. MILLAR: Sorry, you prefer which?

6 D. COBAN: To deal with the remaining matters
7 from CCC now so the panel --

8 M. MILLAR: Sure. Go ahead.

9 D. COBAN: Thank you.

10 So I think the first item was related to the
11 five sampled projects in the audit we reviewed this
12 morning. So we can provide you an undertaking to
13 clarify where on the record you can find the
14 information you are looking for with respect to those
15 projects, and if it is not available, to provide it.

16 M. BUONARGURO: Okay. So that is showing the
17 original budget and the actual budget to show the
18 difference between the two?

19 D. COBAN: That is right.

20 M. BUONARGURO: Thank you.

21 D. COBAN: And the second item was related to
22 AMPCO-92.

23 M. BUONARGURO: Well, actually, go back.

24 D. COBAN: Oh.

25 M. BUONARGURO: There were two parts to the
26 first one. It was the budget versus actual cost, and
27 then there was the original schedule versus actual
28 schedule for the six projects. It is two subsets of

1 the same --

2 D. COBAN: Yes.

3 M. BUONARGURO: -- cohort. As long as both of
4 those are in that undertaking, that is fine.

5 D. COBAN: Yeah.

6 M. BUONARGURO: Okay.

7 M. MILLAR: Okay. Thank you. And I failed to
8 appreciate this is the end of Panel 1. There
9 actually is a very brief Board Staff follow-up. I
10 think there was a reference that Mr. Paliy wanted to
11 get some confirmation around.

12 And, Mr. Paliy, are you with us online?

13 Y. PALIY: Yes. Thank you, Mr. Millar. I am
14 here.

15 M. MILLAR: Okay. Please go ahead.

16 D. COBAN: Sorry, Mr. Millar, can we just --

17 M. BUONARGURO: We are still --

18 M. MILLAR: Are you guys still going?

19 M. BUONARGURO: We are still going.

20 M. MILLAR: Okay. Well, Mr. Paliy, sit tight.

21 I apologize.

22 Y. PALIY: Okay, thank you.

23 M. MILLAR: That is just a preview.

24 D. COBAN: If you can just give us an
25 undertaking number. Mr. Millar, if we can have a
26 undertaking number for the sampled projects.

27 M. MILLAR: Okay. Let me pull myself together.
28 So that is JT-2.12, I believe.

1 D. COBAN: Thank you.

2 **UNDERTAKING JT-2.12: PROVIDE FOR THE FIVE**
3 **SAMPLED PROJECTS REVIEWED IN THE AUDIT, THE**
4 **ORIGINAL BUDGET VERSUS ACTUAL COST AND THE**
5 **ORIGINAL SCHEDULE VERSUS ACTUAL SCHEDULE, OR**
6 **IDENTIFY WHERE THE INFORMATION APPEARS ON THE**
7 **RECORD**

8 D. COBAN: And the second matter was related to
9 AMPCO-92 and the list of overhaul projects in Chart
10 1. We can clarify that the distinction between the
11 original version of that chart and the second version
12 we were looking at today is with respect to the
13 allocated versus unallocated projects. And we now
14 have the new -- the original version of chart, which
15 I think you intended to ask questions on, Mr.
16 Buonarguro.

17 M. BUONARGURO: Yes.

18 D. COBAN: We have that available for the
19 witnesses.

20 M. BUONARGURO: If we could put that up on the
21 screen, I have a few questions.

22 D. COBAN: Thank you.

23 M. BUONARGURO: Thank you.

24 **EXAMINATION BY M. BUONARGURO:**

25 M. BUONARGURO: So for anybody looking at the
26 transcript, we are looking at Exhibit L, F1-AMPCO-92,
27 and I want to look at Chart 1.

28 So my understanding is that this is a list of

1 all of the -- this is a list of all the overhaul
2 projects scheduled for the test year. And I think
3 there is 27 of them. Is that still correct? Or was
4 that correct? Or what is the current status of that?
5 Because the impression I got from the updated exhibit
6 is that there was far fewer, but I don't think that
7 is true.

8 M. HANNON: That is correct. This is a full
9 list of both allocated and unallocated overhaul
10 projects for the test year '27.

11 M. BUONARGURO: And so the significance of some
12 of them being unallocated is what exactly?

13 M. HANNON: It would be due to the timing of
14 when the business plan was put together.

15 M. BUONARGURO: Okay. So should I understand
16 that to mean that at the time that the business plan
17 was put together, there was unallocated -- sorry,
18 allocated and unallocated, and then since that time,
19 the unallocated has become allocated? Is it that
20 simple?

21 M. HANNON: Potentially some of these would have
22 been transitioned to allocated, yes.

23 M. BUONARGURO: Okay. So I think what you are
24 telling me is that you are about 99 percent sure that
25 these are the projects that you want to do in 2027
26 for overhauls. There is a chance that one or two
27 might come out and be replaced by something else, but
28 this is generally the plan; is that fair?

1 M. HANNON: It is fair.

2 M. BUONARGURO: Okay. And so -- and presumably
3 the outages associated with these overhauls are what
4 underpin the outage forecast for 2027?

5 M. CHIDIAC: That is correct.

6 M. BUONARGURO: Okay. And so there are 27
7 stations on this list. Mr. Pender, you were talking
8 yesterday about the rate at which you would do
9 overhauls. My understanding from yesterday is that
10 overhauls for stations are generally done between 25
11 and 30 years -- in 25 to 30-year intervals; is that
12 correct?

13 N. PENDER: At a global planning horizon, that
14 is -- yeah, as per CEATI and U.S. Army Corps, that is
15 the planning horizon we take, yes.

16 M. BUONARGURO: Okay. And that is what you use?

17 N. PENDER: We use as a concept for planning
18 them in, you know, subject to asset condition, what
19 has actually happened to the unit. As we get closer
20 in, we will refine that plan. But if you are looking
21 for a placeholder, that is not an unreasonable
22 starting point.

23 M. BUONARGURO: Thank you.

24 And based on that, you were speaking yesterday
25 about doing around 20 percent of your stations every
26 five years based on if you use 25 as the placeholder,
27 25 years, and 207 stations, you are looking at doing
28 about 20 percent of those stations every five years.

1 Do you remember that?

2 N. PENDER: Yeah, I think we talked about doing
3 53 stations in the rate period, and we drew a
4 parallel to -- and our business plan was '25 through
5 '31, so I was drawing a conclusion. That is a seven-
6 year period. We are doing about a quarter. So I
7 made the round approximation to in 30 years, you
8 would get through the entirety of the fleet on a
9 planning basis.

10 M. BUONARGURO: So thank you for that.

11 So my -- what piqued my interest when I saw this
12 exhibit is that in this exhibit, you are doing '27 in
13 year 1 of a five-year period. And at that rate, you
14 would be doing around -- out of your stations, out of
15 your 200 stations, you would be doing about 40
16 percent of your stations in the five-year period if
17 that is the rate in which you are doing them, which
18 would seem to be well in excess of what -- the rate
19 you were talking about yesterday. So I wanted to ask
20 you about that. How does that make sense?

21 I think it is about 12 percent of your stations
22 in 2027, and at that rate, it would be 60 percent of
23 the stations over five years.

24 N. PENDER: Yeah, okay. So I was referring to
25 the 53 capital, and I think these are -- these are
26 OM&A.

27 M. BUONARGURO: Yeah.

28 N. PENDER: So we talked yesterday around the

1 distinction between capital OM&A projects --

2 M. BUONARGURO: Yeah.

3 N. PENDER: -- and refurbishments and overhauls.
4 So this is where we are incurring spend in the year
5 of 2027 in OM&A. That doesn't mean they will be done
6 and dusted in that one year. So it overlaps that
7 one-year period.

8 So if you can take a look on here, let's take
9 Saunders as a good example, there are three listed
10 projects where there is OM&A spend but different
11 amounts of OM&A spend. So the pacing of these
12 projects is some will have started, some are
13 starting, and so you can see there's G16 is \$3
14 million, G2 is \$1 million, and G10, 3.7.

15 M. BUONARGURO: Okay.

16 N. PENDER: So depending on the time of the
17 duration of that outage, you will incur spend prior
18 and post.

19 M. BUONARGURO: Sorry. Are you saying that
20 these overhauls are multi-year projects?

21 N. PENDER: I am saying they are projects of
22 different length. So some projects may cross over,
23 yes.

24 M. BUONARGURO: Okay. You mentioned -- you
25 suggested that your discussion yesterday about doing
26 around, I think, 20 percent of the stations every
27 five-year period generally seemed to be -- had to do
28 with capital work. And when you said "capital work,"

1 I took you to mean refurbishments; right?

2 N. PENDER: On record we referred to 53
3 refurbishments doing --

4 M. BUONARGURO: Yeah.

5 N. PENDER: -- and to do over the rate period,
6 yes.

7 M. BUONARGURO: No, I know, but you were talking
8 about it generally. In relation to the 25 to 30-year
9 period for overhauls, I thought you were talking
10 about doing around 53 or so in there, doing about 20
11 percent of your force, every five years, but then you
12 answered -- now you have said -- what you are saying
13 now, you seem to be saying -- suggesting that you
14 have to do around 20 percent of your stations. You
15 have to refurbish them every five -- you have to do
16 about 20 percent of your stations every five years,
17 which doesn't make sense.

18 D. COBAN: Mr. Buonarguro, I am sorry. Just for
19 the clarity of the record, I think there is a missing
20 piece of the puzzle. I just want to make sure we are
21 all looking --

22 M. BUONARGURO: Yeah.

23 D. COBAN: -- and recalling the testimony from
24 yesterday.

25 M. BUONARGURO: Sure.

26 D. COBAN: Mr. Pender spoke about stations, and
27 he also spoke about units, and what we are looking at
28 here is both of those pieces of information. So I

1 just want to make sure you are not extrapolating just
2 to the station population when there is actually a
3 unit universe.

4 M. BUONARGURO: I am talking about units, sorry.

5 D. COBAN: Okay.

6 M. BUONARGURO: I meant to speak about units.

7 D. COBAN: Okay.

8 M. BUONARGURO: Of which there is about 207, I
9 believe, is what was quoted yesterday.

10 N. PENDER: There are, yes.

11 M. BUONARGURO: Right. And from an overhaul
12 perspective, every station should be overhauled every
13 25 to 30 years?

14 N. PENDER: Unit.

15 M. BUONARGURO: Sorry, unit. 207 units, each
16 unit overhauled every 25 to 30 years; did I get that
17 right?

18 N. PENDER: As a global planning horizon,
19 subject to asset condition utilization, dot, dot,
20 dot.

21 M. BUONARGURO: Fair enough.

22 And I pointed out that there appears to be 27
23 being overhauled in the test year, and you are
24 telling me -- you said, well, it is not really 27
25 because some -- not all of those will finish in that
26 one year and that you are not going to end up doing -
27 - at this pace it looked like you would be touching
28 60 units over five years. Can you tell me how many

1 actual units you intend to go over the five-year
2 period? At this rate it would be around 60 percent.
3 What percentage do you think you will actually end up
4 overhauling over the five years?

5 N. PENDER: Okay. We are going backwards and
6 forwards. Should we -- maybe it is helpful to
7 clarify --

8 M. BUONARGURO: Yeah.

9 N. PENDER: -- the number of capital
10 refurbishments we are doing in the period and the
11 number of OM&A overhauls.

12 M. BUONARGURO: I am only talking about
13 overhauls.

14 N. PENDER: Okay.

15 M. BUONARGURO: My understanding is that the 25
16 to 30-year period, planning period, is with respect
17 to overhauls?

18 N. PENDER: Let's use different terminology.
19 Let's call it "significant work," if it makes it
20 easier for you.

21 M. BUONARGURO: Okay.

22 N. PENDER: Whether it is the colour of the
23 money -- when I say "colour," I mean capital or OM&A
24 -- let's call that significant work. So every 25 to
25 30 years, we would plan significant work on a unit on
26 a planning horizon, subject to necessity and asset
27 condition. That work might be, A, overhaul work, so
28 let's just call it maintenance-style work, or it

1 might be capital replacement work to extend the life
2 of the componentry, which is more than maintenance;
3 it is replacement with something new. So you can
4 draw the distinction from major work, two lines,
5 refurbish -- maintenance work or refurbishment work.

6 M. BUONARGURO: Yeah.

7 N. PENDER: The decision of the nature of that
8 work will be the requirement of the unit. So if we -
9 - let's say we walked through this list, what happens
10 at Otter Rapids, Otto Holden, RH Saunders,
11 Stewartville will be different by unit. When we do
12 refurbishment work, there is always an element of
13 OM&A in there, as Ms. Hannon talked about yesterday,
14 in terms of teardowns or accessing what we are doing.

15 M. BUONARGURO: So in reading the evidence, what
16 I got from it was this: When you build a unit at the
17 unit level, you expect to overhaul that unit every 25
18 to 30 years; is that fair?

19 N. PENDER: I expect to do major work. So we
20 have just introduced this new concept because we are
21 getting --

22 M. BUONARGURO: But the minimum would be -- the
23 minimum would be an overhaul?

24 N. PENDER: Reasonable assertion, yes.

25 M. BUONARGURO: Right. What you are telling me
26 is that you might need to refurbish it, depending on
27 what happens in that 25 to 30 years, do additional
28 work, which might be capital work?

1 N. PENDER: Correct.

2 M. BUONARGURO: But some of the units -- well, I
3 would hope that the expectation is that most, if not
4 all, of your units would last longer than 30 years
5 without the need for refurbishment. Isn't that, in
6 fact, the case, that you don't refurbish every 25 to
7 30 years?

8 N. PENDER: Again, subject to asset conditions,
9 though, how the unit is run, but your assertion is
10 reasonable. Some of the components will last one or
11 two cycles of 25 years. Yes, I can agree on that.
12 Some won't.

13 M. BUONARGURO: Okay. We are just trying to
14 sort this out to figure out exactly what is going on
15 in terms of the hydroelectric fleet.

16 Are you able to provide, for the 207 units or
17 whatever they are -- I think it is 207 -- but for the
18 fleet of units --

19 N. PENDER: We have established that, yes.

20 M. BUONARGURO: -- what is happening to each
21 unit over the five-year period -- overhaul,
22 refurbishment, both -- and in which year so we can
23 see a snapshot of where the state of the fleet is in
24 terms of overhaul versus refurbishment versus both?

25 N. PENDER: I am going to try and understand
26 your question correctly because we have had an
27 interesting exchange. So throughout all our
28 evidence, we have listed specifically what we are

1 doing refurbishment-wise and OM&A-wise on a unit-by-
2 unit basis. It is in multiple reference points.

3 We have also declared, in one of the other
4 evidences, all the stations we have got and the
5 number of units contained in those stations. That is
6 also on evidence, I think, in one of the earlier base
7 exhibits. So we could draw from all of the evidence
8 we have given you -- let's call it a one-size-fits-
9 all complete picture -- so you can see what we are
10 doing in the rate period '27 to '31 for major work,
11 OM&A capital, and then those units which are not
12 featured in those plans.

13 M. BUONARGURO: I think that would be great.
14 That would be very useful. Thank you. I appreciate
15 that.

16 N. PENDER: Yeah, we can do that.

17 M. MILLAR: So that is JT-2.13.

18 **UNDERTAKING JT-2.13: PROVIDE A BREAKDOWN WHAT**
19 **IS HAPPENING TO EACH OF THE 207 FLEET UNITS OVER**
20 **THE FIVE-YEAR PERIOD AND INDICATE THE YEAR IN**
21 **WHICH EACH OVERHAUL, REFURBISHMENT, OR OTHER**
22 **MAJOR WORK IS SCHEDULED**

23 M. BUONARGURO: I have one more question that
24 has nothing to do with this, and it is because we are
25 having an argument, and I want to make sure we get it
26 right. This has to do with the hydroelectric
27 incentive mechanism. The proposal for 2027, as I
28 understand it, is that there is a forecast amount. I

1 believe it is \$17.8 million in HIM revenue, if you
2 could take that subject to check. It is in the
3 reference.

4 M. CHIDIAC: That is correct.

5 M. BUONARGURO: That -- from that forecast, 50
6 percent of that is included in rates as a credit to
7 ratepayers?

8 M. CHIDIAC: Correct.

9 M. BUONARGURO: And to the extent that in any
10 particular year, including 2027, the actual revenue
11 exceeds 17.8, the company is proposing to keep a
12 hundred percent of that excess? That is the
13 proposal?

14 M. CHIDIAC: Sorry. Could you repeat the last
15 part.

16 M. BUONARGURO: To the extent that the revenue
17 in any particular year exceeds 17.8 million, so that
18 -- we will call it a threshold, even though it is no
19 longer a threshold under your proposal -- that money
20 just stays with the -- stays with OPG? There is no
21 sharing? It doesn't go into an account or anything?

22 M. CHIDIAC: That is correct. Our proposal is
23 to eliminate the HIM sharing above the threshold, and
24 we have demonstrated through the evidence and through
25 the SBGVA study that the HIM sharing creates an
26 economic barrier to OPG's optimization of the PGS
27 facility.

28 M. BUONARGURO: Thank you.

1 But the important part from my question is that
2 the -- within the forecast, there is 50/50 sharing of
3 that in the embedded rate?

4 M. CHIDIAC: Correct.

5 M. BUONARGURO: The 17.8 starts around -- I
6 can't do the math without lunch -- \$8.something
7 million is credited to ratepayers in the revenue
8 requirement or the --

9 M. CHIDIAC: That is correct.

10 M. BUONARGURO: Thank you. That is just for
11 clarification. Thank you. Those are my questions.

12 M. MILLAR: Thank you, Mr. Buonarguro. Mr. --

13 N. PENDER: Could I -- could I just go back to
14 the earlier undertakings? I want to make sure we get
15 this right the first time, not --

16 M. BUONARGURO: Sure.

17 N. PENDER: -- the third time.

18 So A1-4-2, we have a listing on page 2 of all of
19 our assets, if we could pull it up, please. Page 2
20 of A1-4-2. So this lists out [indiscernible]
21 station, number of units, net installed capacity in
22 terms of megawatts. So to answer my prior question,
23 we will be doing an extension of this form.

24 M. BUONARGURO: Yeah, yeah. At the unit level,
25 so, for example, Abitibi Canyon, it may be the case
26 that all five units have the exact same --

27 N. PENDER: Correct.

28 M. BUONARGURO: -- thing? But if they are not,

1 you will tell us, like --

2 N. PENDER: Correct.

3 M. BUONARGURO: -- units 1, 2, and 3 are -- this
4 is what is happening by unit?

5 N. PENDER: Correct. In the period, yes.

6 M. BUONARGURO: Okay. That is fine. Thank you.

7 M. MILLAR: Okay. Thank you.

8 Mr. Paliy.

9 **EXAMINATION BY Y. PALIY:**

10 Y. PALIY: Thank you, Mr. Millar. Yaroslav
11 Paliy here for OEB Staff. During our exchange
12 yesterday regarding unallocated projects, OPG pointed
13 me to an AMPCO IR response, but I don't see all the
14 information we requested in what OPG referenced. So
15 we need to double-check that we have a common
16 understanding before we conclude this witness panel.

17 Can we please pull up Exhibit D1-1-2, Table 4.
18 Great. Thank you. Could we just scroll down to the
19 2027 to 2031 period. Thank you.

20 So yesterday I asked OPG to provide a
21 yearly breakdown of the unallocated projects that
22 contribute to the forecast in-service capital
23 additions for the 2027 to 2031 period seen in lines
24 27, 30, 32, 33, 34, and 35.

25 As we can see on the screen, these lines
26 reference the in-service capital additions related to
27 the following unallocated project. So the first one
28 is line 27, which is the total portfolio project, and

1 the next is refurbishment projects for line 30, and
2 then -- and so on. So line 32 is redevelopment
3 projects and so forth.

4 So OPG directed us to Exhibit L-F1-AMPCO-091 for
5 this information. Could we please pull up that
6 exhibit. Great. Thank you. And if we can scroll
7 down to Chart 3, please. Thank you.

8 So in this chart, OPG shows the unallocated
9 refurbishment projects over \$10 million and their in-
10 service additions during the 2027 to 2031 term.
11 Similarly, if we scroll down to Chart 4, OPG shows
12 the unallocated and allocated refurbishment projects
13 less than \$10 million and their in-service additions
14 during the 2027 to 2031 term.

15 So OEB Staff noticed after the fact that the
16 information contained in this interrogatory response
17 is only for refurbishment projects. OEB Staff
18 originally also requested to see the in-service
19 additions for 2027 to 2031 for the other project
20 categories besides refurbishments.

21 So can OPG please undertake to provide a list of
22 all the -- of all the unallocated portfolio, Sir Adam
23 Beck 1 GS canal rehabilitation and Abitibi Canyon
24 concrete and sluiceway rehabilitation program
25 projects, and their respective in-service additions
26 during the 2027 to 2031 term, similar to what OPG
27 provided for the unallocated refurbishment projects
28 in Exhibit L-F1-AMPCO-091, charts 3 and 4.

1 M. HANNON: We sure can.

2 Y. PALIY: Thank you.

3 M. MILLAR: Okay. So we will -- let's just mark
4 that as a new undertaking, JT -- pardon me -- JT-
5 2.14.

6 **UNDERTAKING JT-2.14: PROVIDE A LIST OF ALL OF**
7 **THE UNALLOCATED PORTFOLIO, SIR ADAM BECK 1 GS**
8 **CANAL REHABILITATION AND ABITIBI CANYON CONCRETE**
9 **AND SLUICeway REHABILITATION PROGRAM PROJECTS,**
10 **AND THEIR RESPECTIVE IN-SERVICE ADDITIONS DURING**
11 **THE 2027 TO 2031 TERM**

12 M. MILLAR: Is that everything, Mr. Paliy?

13 Y. PALIY: That is everything. Thank you very
14 much.

15 M. MILLAR: Okay. Thank you so much.

16 Okay. We had some bonus questions there, but,
17 Panel 1, your technical conference journey has come
18 to an end. Thank you very much for your helpful
19 responses. We will pause for an hour and come back
20 at, let's say, 1:30.

21 Just a quick admin note, I can't return until
22 2:00, and Mr. Richler is away, so Mr. Eminowicz will
23 be taking hosting duties to begin Panel 2, and they
24 will be ready to go at 1:30. Great. Okay. Thanks,
25 everyone.

26 --- Recess taken at 12:28 p.m.

27 --- Upon resuming at 1:30 p.m.

28 T. EMINOWICZ: Okay. Thank you, everyone.

1 Welcome, Witness Panel Number 2, for EB-2025-0297
2 technical panel -- technical conference.

3 Mr. Keizer, I think -- do I ask if there is any
4 preliminary stuff?

5 C. KEIZER: There are no preliminary matters.

6 T. EMINOWICZ: Okay. Thank you.

7 I see Mr. Walker on the screen, so, please, Mr.
8 Walker, take it away.

9 C. KEIZER: Would it be helpful -- I mean, we
10 haven't done an appearance necessarily for this
11 Panel, so maybe we should do an appearance for
12 purposes of other counsel in the room and for Mr.
13 Walker. So maybe if I could do that now. Maybe I
14 could ask the witnesses to introduce themselves, name
15 and their title, starting with Mr. Le Dreff to begin.

16 **APPEARANCES**

17 P. LE DREFF: Good afternoon. Perrik Le Dreff,
18 VP of nuclear projects.

19 J. BLAZANIN: Good afternoon. John Blazanin,
20 senior vice president, project support.

21 K. CAREW: Kathleen Carew, vice president,
22 operations.

23 M. EL DEFRAWY: Good afternoon. Mohamed El
24 Defrawy, director, controllership nuclear.

25 S. NELMS: Good afternoon. Scott Nelms, VP,
26 commercial strategy.

27 J. PEREIRA: Good afternoon. Joel Pereira,
28 director, finance, enterprise projects organization.

1 D. KINDLON: Good afternoon. Derek Kindlon,
2 director of controllership supporting projects.

3 C. KEIZER: And I think that is it. I don't
4 know if you -- from counsel table -- I wasn't here
5 this morning, so for purposes of appearance, Charles
6 Keizer, counsel for OPG, and I am joined by Mr.
7 Jonathan Myers, co-counsel for OPG. And with me is
8 Mr. Bryan Icyk, who is not appearing this morning but
9 is now with us for this panel. And Ms. Zadeh is also
10 with us, but she put in an appearance this morning
11 with the first panel.

12 T. EMINOWICZ: Thank you for helping find the
13 parking brake.

14 Over to you, Mr. Walker.

15 C. KEIZER: Sorry. Before we begin, Mr. Walker,
16 could I just ask, make sure the witnesses in the back
17 row have their mics properly adjusted so that they
18 are picked up accordingly. I think -- yes, sir,
19 could you just make sure -- do you have a mic? Okay.
20 Good. Sorry, I see a mic sticking up in the air, and
21 I thought for some reason it wasn't directed to
22 anyone. But I guess it is just because we have a
23 number of people on the panel. Thank you.

24 Sorry, Mr. Walker, for interrupting.

25 S. WALKER: Oh, not at all, Mr. Keizer.

26 **EXAMINATION BY S. WALKER:**

27 S. WALKER: Good afternoon, everyone. My name
28 is Scott Walker, and I am OAPPA's consultant in this

1 very, very complex application.

2 I have the dubious distinction of having been
3 inside a CANDU calandria which occurred while
4 Darlington was still being constructed.
5 Fortuitously, it provides me with a stark personal
6 perspective on the magnitude of what OPG is
7 undertaking here.

8 So I did want to thank you, Panel 2, for being
9 here, for the answers that you and your team have
10 provided to our interrogatories, and for your
11 indulgence today with our additional questions. I
12 suspect some of my needs will be addressed by an
13 undertaking or two today, and in re-reading your
14 IRRs, respect that you satisfactorily answered some
15 of our questions and those of my fellow intervenors
16 with whom we have common concerns.

17 I will hopefully not need the full allotment of
18 my time as a consequence and hope to put us back on
19 schedule. We will see. But if there is additional
20 time, I would ask that it be deferred to Panels 3 and
21 4, or if needed by my esteemed colleagues as well.

22 So hot after lunch, my first series of questions
23 pertain to the broader governance, oversight, and
24 gating processes of the Pickering refurbishment
25 program.

26 Ms. Patchett, can I ask you to please pull up
27 Exhibit D2, Tab 3, Schedule 9, and that is page 12 of
28 16. And if you could, to ideally figure it -- sorry,

1 centre the screen on Figure 2.

2 Ms. Laundry. I am sorry.

3 May I ask the panel where they sit on this
4 hierarchy of assurance?

5 J. BLAZANIN: Predominantly, we would sit in
6 that second to bottom layer where it says "chief
7 project officer and enterprise projects executive
8 team."

9 S. WALKER: Perfect. Sorry. That is, you know,
10 obviously a very important base to the entire
11 pyramid. You know, you are broadly supporting the
12 structure. And probably where an awful lot of the
13 real work gets done.

14 However, I did want to sort of suggest that, you
15 know, two thirds of this hierarchy assurance isn't
16 necessarily represented today, so I did want to make
17 sure that you guys were comfortable answering
18 questions or pointing me to evidence or taking
19 undertakings as it relates to my inquiries about
20 this.

21 C. KEIZER: I guess that would entirely depend
22 on the nature of the question, Mr. Walker.

23 S. WALKER: Fair enough, Mr. Keizer. All right.
24 Let's get to it, then.

25 So let's start at the top of this pyramid. From
26 OPG's perspective, that is. So, again, unless the
27 Panel has the answer, I will accept an undertaking.
28 Can you please confirm who currently sits on the

1 major projects committee to the Board of Directors.

2 J. BLAZANIN: There are several members of our
3 OPG board that make up the major projects committee.
4 I don't have all of the list of the names, but there
5 is probably about four or five of the board members
6 that make up the major project committee.

7 S. WALKER: Would you undertake to identify who
8 those are?

9 C. KEIZER: I believe they are publicly
10 available on OPG's website, but to the extent it will
11 facilitate matters, we will do that.

12 S. WALKER: Awesome. Yeah, I went looking, Mr.
13 Keizer. I couldn't actually find it. Would you be
14 able to confirm --

15 T. EMINOWICZ: Sorry. Mr. Walker --

16 S. WALKER: Yes?

17 T. EMINOWICZ: -- do you want me to mark that?
18 Do you want to mark that?

19 S. WALKER: Please.

20 T. EMINOWICZ: JT-2.15.

21 S. WALKER: As part of that undertaking, could
22 you confirm the current term of each member's
23 appointment?

24 C. KEIZER: That is fine.

25 S. WALKER: Thank you.

26 **UNDERTAKING JT-2.15: IDENTIFY WHO CURRENTLY**
27 **SITS ON THE MAJOR PROJECTS COMMITTEE TO THE**
28 **BOARD OF DIRECTORS AND WHAT THE CURRENT TERM OF**

1 **EACH MEMBER'S APPOINTMENT IS**

2 S. WALKER: Can you please confirm that both OPG
3 CEO, Ms. Butcher, and the board chairperson, Ms. Kei,
4 are required to attend the meetings of the major
5 projects committee?

6 J. BLAZANIN: Ms. Kei and Ms. Butcher do attend
7 the major projects committee meetings.

8 S. WALKER: Excellent. Okay. Thank you.

9 No need to pull this up, but in your response to
10 L, D2-Staff-115, you provided detailed reports from
11 the refurbishment review board which this chart
12 identifies as the independent -- oops.

13 C. KEIZER: Sorry. Maybe you could proceed with
14 your question --

15 S. WALKER: Yeah, fair enough. Thank you.

16 C. KEIZER: -- deal with this particular IR.

17 S. WALKER: Yeah, fair enough.

18 Ms. Laundry, if we could actually just go back
19 to the form of chart, that would be appreciated.

20 So it -- as part of the IRR, you provided
21 reports from the refurbishment review board, and that
22 committee reports to the major projects committee, I
23 understand. And I see from your response to Staff
24 that Paul Pasquet, former chief nuclear officer for
25 OPG, is currently the chair of the refurbishment
26 review board. Fairly an excellent choice.

27 So I am not looking for confirmation of values
28 of their remuneration for the services they provide,

1 but can you please confirm that the members of the
2 review board are not currently employees of OPG?

3 C. KEIZER: Can I have a moment.

4 S. WALKER: I am sorry. I didn't hear that.

5 C. KEIZER: Sorry, Mr. Walker. I just wanted to
6 have a moment. I will be right with you.

7 S. WALKER: Okay. Thank you.

8 C. KEIZER: Mr. Blazanin, maybe you know best
9 for this one.

10 J. BLAZANIN: Yeah. So I can answer that
11 question.

12 The majority of the members of the refurbishment
13 review boards are independent members no longer
14 employed by OPG or have never been employed by OPG.
15 But, usually, there is one individual that supports
16 that team from within OPG who is not directly related
17 to that project. So if it was a Pickering
18 refurbishment review board, there would be somebody
19 within OPG who is not associated with that project.

20 S. WALKER: Okay. Thank you. I did note that
21 from some of those reports, that there was an
22 acknowledgement of the OPG people participating.

23 So unless you know, I will also accept an
24 undertaking, can you please confirm the current term
25 of the chair and each member of the refurbishment
26 review board?

27 C. KEIZER: Yeah, that is fine.

28 S. WALKER: Thank you.

1 T. EMINOWICZ: JT-2.16.

2 S. WALKER: Thank you.

3 **UNDERTAKING JT-2.16: CONFIRM THE CURRENT TERM**
4 **OF THE CHAIR AND EACH MEMBER OF THE PICKERING**
5 **REFURBISHMENT REVIEW BOARD**

6 S. WALKER: Would you be willing to provide a
7 brief CV, if it is not publicly available, of those
8 members as well? You can certainly skip Mr.
9 Pasquet's.

10 C. KEIZER: I believe that information was filed
11 on the record in confidence already. If you want,
12 Mr. Walker, we can have a look at the break as to
13 where that could be and save us giving an
14 undertaking, and we can advise you after the break.

15 S. WALKER: Oh, that would be awesome. Thank
16 you, Mr. Keizer.

17 C. KEIZER: And, sorry, just to make sure we got
18 it right, you wanted to know if -- the clarification
19 is whether their CVs have been filed on the record in
20 confidence?

21 S. WALKER: Correct.

22 J. BLAZANIN: Could I ask one more clarifying
23 question. Are you speaking about the Pickering
24 refurbishment review board?

25 S. WALKER: I am. Yeah, exactly.

26 J. BLAZANIN: Okay. Thank you.

27 S. WALKER: Yeah. Yeah. I will leave the
28 Darlington new nuclear program until later.

1 Okay. So I need to give you a little bit
2 of a preamble so that you have some context about
3 where I am coming from.

4 A decade ago, in your first application to
5 refurbish a nuclear generating station -- everybody
6 following along at home, that was EB-2016-0152 --
7 your CEO at the time, Jeffrey Lyash, confirmed during
8 discovery that he was and would continue to have
9 weekly on-site meetings at Darlington with the
10 executive project management team. I wanted to let
11 you know that that specific executive commitment was
12 a significantly notable, hierarchically assurance to
13 me.

14 So relatedly, now that we embark on this next
15 major refurbishment project, and respecting that it
16 is still operating and that the refurbishment itself
17 hasn't actually started yet at Pickering, does the
18 Panel know how regularly the current CEO and chief
19 nuclear officer intend to be meeting with the PRP
20 construction management executive team?

21 J. BLAZANIN: We have regularly reoccurring
22 meetings that occur that are preplanned meetings with
23 a set agenda and structure where the CEO will attend,
24 where the CNO will attend. Those are minimally
25 quarterly meetings.

26 But we also have a chief projects officer who we
27 enroll for the enterprise projects organization, Subo
28 Sinnathamby. She meets with the project team

1 regularly, at least once a month, and that is the
2 regular cadence.

3 Outside of those scheduled meetings there, I do
4 know that there are frequently held meetings at the
5 CEO level and below. I don't know the exact
6 frequency.

7 S. WALKER: Fair enough. Do you know how many
8 of those meetings with the CEO and the chief nuclear
9 officer would actually occur on site?

10 J. BLAZANIN: I couldn't give you that answer.
11 I don't know.

12 S. WALKER: Okay. If I promise to end this line
13 of governance questioning, would you undertake to
14 provide as fulsome an answer as you can detailing the
15 CEO and the chief nuclear officer's intended
16 schedules and plans around this if not as frequently
17 as quarterly or if more frequently than quarterly, as
18 you have described.

19 C. KEIZER: Can I just have a moment, Mr.
20 Walker?

21 S. WALKER: Yes, of course, Mr. Keizer.

22 C. KEIZER: That is fine, Mr. Walker.

23 S. WALKER: Awesome, thank you.

24 T. EMINOWICZ: I will mark that as JT-2.17.

25 S. WALKER: Thank you, sir.

26 **UNDERTAKING JT-2.17: PROVIDE A DETAILED**
27 **EXPLANATION OF THE FREQUENCY BY WHICH THE CEO**
28 **AND CHIEF NUCLEAR OFFICER MEET WITH THE PRP**

1 **EXECUTIVE MANAGEMENT TEAM**

2 S. WALKER: I will defer my remaining off
3 ramping and related questions to Staff and my
4 esteemed colleagues.

5 Ms. Laundry, could ask I you to pull up L, D2-
6 OAPPA-005, bring it up on the screen, and if you
7 could just reference the answers to A and B starting
8 on line 30. Awesome. Thank you.

9 Okay. So professionally, I need to take my
10 engineering hat off for a moment and ask you some
11 questions from a layperson's perspective. So I note
12 in your answer here to part A the reasons why the new
13 units' outputs will be 6.7 percent higher than they
14 are currently, or an additional 35 megawatts. Thank
15 you.

16 For context in terms of where I am coming from
17 now, our perspective is that the more electricity
18 that is produced, the better. Because it helps
19 spread out the largely fixed costs of a nuclear
20 facility across more production of energy, and it
21 effectively lowers the unit rate for all consumers.

22 So can you tell me, is the generator custom
23 designed, or is it a commercially available, off-the-
24 shelf predesigned unit?

25 J. BLAZANIN: Would you be kind enough to repeat
26 the question for us?

27 S. WALKER: Sure. Is the generator custom
28 designed, or is it one that would be commercially

1 available from one of the generator manufacturers?
2 An off-the-shelf, if you will, sort of predesigned
3 unit?

4 C. KEIZER: Sorry. I am not sure, maybe it is
5 confusing when you use the word "generator" because
6 we talk about generator stations, we talk about --
7 just make sure that the Panel understands what you
8 mean by "generator."

9 S. WALKER: I am sorry. The turbine unit. The
10 rotor, stator thing that actually generates the
11 electricity itself. That was about as non-
12 engineering as I could get, by the way.

13 J. BLAZANIN: I don't know that -- how many of
14 these turbine generator sets are off-the-shelf, so to
15 speak, but it is [indiscernible] within the Pickering
16 station.

17 S. WALKER: So this -- I am sorry, it is
18 probably in evidence, but, you know, who is the
19 manufacturer of the turbine units? Is that -- it is
20 not all built on -- in your shop on site, is it?

21 J. BLAZANIN: Siemens Energy is the original
22 equipment manufacturer for these units.

23 C. KEIZER: Sorry. Can we -- I think there may
24 be -- is there a misunderstanding just in terms of
25 what A is saying? It says:

26 "The installation of new turbine and moisture
27 separator reheat equipment." [as read]

28 Are you interpreting that, Mr. Walker, as being

1 a new turbine and moisture separating, or are you
2 interpreting those things to be together?

3 S. WALKER: No. I am sorry. Just the new
4 turbine itself. I respect the moisture separator is
5 a different piece of equipment.

6 J. BLAZANIN: So the turbine generator set at
7 Pickering is being refurbished. It is not being
8 replaced. So we are not removing the existing entire
9 turbine generator set and replacing it. We are
10 replacing the internal components -- the low-pressure
11 spindles, the high-pressure spindles, for example --
12 on the turbine itself.

13 S. WALKER: Okay, okay. That is helpful. That
14 makes more sense to me. All right. That obviates
15 some of the questions I had, then. Fair enough,
16 then.

17 So with respect to the answer you provided to us
18 here in B, are you saying that Pickering's calandrias
19 are smaller than Darlington's; is that correct?

20 K. CAREW: It is Kathleen Carew. That is
21 correct.

22 S. WALKER: Thank you, Ms. Carew. How much
23 smaller are they?

24 J. BLAZANIN: It is my understanding the
25 Pickering calandria has 380 fuel channels, where
26 Darlington has 480 fuel channels.

27 S. WALKER: So quite a bit -- quite
28 substantially smaller. Okay.

1 Is it generally true that a reactor, whether
2 that is one of Pickering or Darlington, is not
3 necessarily producing at full capacity? I mean,
4 obviously, there is refueling, and there is other
5 operational flexibility criteria.

6 K. CAREW: Sorry. Could you restate that
7 question for me?

8 S. WALKER: Yeah. I will try it differently.

9 So the -- the reactor itself isn't putting out
10 the maximum amount of energy it can at all times, is
11 it? And generally, it is at some percentage of the
12 maximum heat that it could emit; is that a fair
13 statement?

14 K. CAREW: So we operate all of our reactors
15 within their licensed limits for their thermal
16 capacity and then the subsequent transfer of energy,
17 as you know, to mechanical energy, and then
18 ultimately, to electrical energy. But we operate at
19 100 percent full power, which is the rated power tied
20 to our license limits.

21 S. WALKER: Okay. And as dictated by the
22 license as opposed to necessarily the capacity of the
23 calandria or the system necessarily?

24 K. CAREW: Well, we operate --

25 S. WALKER: Those are both tied?

26 K. CAREW: That is correct. And it will be tied
27 to what it is designed to do, and similarly, what it
28 is licensed to do.

1 S. WALKER: Okay. Gotcha.

2 So I might now have a bit of a different
3 perspective based on your answer about what you were
4 doing with the turbine unit itself. But are you not
5 fundamentally replacing most, if not all, of the
6 systems and the restrictive components that you
7 identified here as part of the refurbishment program?

8 K. CAREW: The refurbishment program will
9 replace calandria tubes, pressure tubes, feeders, the
10 boilers or the steam generators at Pickering; as
11 well, the turbine spindles will be replaced as well.

12 S. WALKER: Oh, boy, those are large units, are
13 they not? Holy smokes. Okay.

14 Did you assess the cost of duplicating
15 Darlington's generation capacity and output at
16 Pickering?

17 K. CAREW: We did not assess the cost -- and if
18 I understand your question correctly -- to have
19 Pickering produce the same megawatts that Darlington
20 produces as that is not technically feasible.

21 S. WALKER: Again, because you are trying to
22 stay inside the same footprint of the calandria and
23 the existing infrastructure; is that a fair
24 characterization?

25 K. CAREW: We will maintain the same calandria
26 at Pickering. It would be a significantly different
27 project should we change all of -- like, the
28 essential -- like, the shell around the reactor. And

1 so we will stay within the footprint of the existing
2 calandria.

3 S. WALKER: Yeah, and, again, just going back to
4 my -- it is a lot of money. It is \$26 billion. And
5 we are getting less energy out of four units at
6 Pickering than we are -- than we did out of -- are
7 currently out of Darlington. So I was just
8 wondering, you know, if you had done an assessment
9 that said, well, that is -- you know, start out --
10 let's start fresh, let's dig them all out, let's put
11 them all, you know, at -- experience sort of tells us
12 that, you know, refurbishment tends to be more costly
13 than a new construction.

14 So I guess asked and answered that you did not
15 do an assessment on that, so you have no perspective
16 on how much additional money or capital would be
17 required to rebuild the facility?

18 C. KEIZER: Well, I think the -- your -- the
19 answer in part B talks about why they -- why OPG
20 would not have considered, given it is not feasible,
21 and I think that is the basis of the answer from Ms.
22 Carew.

23 S. WALKER: Yeah, yeah. No, fair enough, Mr.
24 Keizer. Thank you. Sorry. Just a quick second
25 here. All right. So, I mean, you know, obviously,
26 the more units you are producing, the better.
27 Because the more -- the more you are producing, the
28 more we are able to stretch out the costs across the

1 larger units -- more units, rather.

2 But on the matter of production, could I ask,
3 Ms. Laundry, that you bring up L-E2-OAPPA-010 or 010.
4 And if we could look at the answer to part C here,
5 starting on line 38. First, thank you, OPG, for
6 providing the IRRs that you did and for the
7 accompanying formula. I actually think that I almost
8 now understand the difference between the capability
9 and the rate factors. But I do apologize for missing
10 this until last night and suspect that it was -- and
11 respect, rather, that it was just likely an
12 oversight. But you didn't provide me with Attachment
13 1, and I had some questions that I had thought I
14 wanted to -- can we ask for an undertaking to provide
15 that attachment?

16 C. KEIZER: I believe that is an attachment
17 related to Exhibit E2-1-1, Attachment 1. So that
18 would be an Attachment 1 found in the pre-filed
19 evidence, I believe.

20 S. WALKER: I am not sure that it is. Could we
21 bring up that IRR again, Ms. Laundry. Go up to the
22 request.

23 So this particular request asked for what the
24 change in production would be for each of the
25 facilities based on a utility unit capacity factor
26 change over the IR term and would be a table that
27 would sort of reflect annually what the change in the
28 output production would be, and that is not in that

1 reference you provided, Mr. Keizer.

2 C. KEIZER: Okay. So can we, then -- just
3 before we proceed on, can you just -- when you read
4 your question for the purposes of this undertaking,
5 are you in reference to any particular part or only
6 in terms of clarifying what the appropriate reference
7 should have been in the response to A related to
8 Attachment 1; is that what you are asking about?

9 S. WALKER: No. I would actually like this
10 table to be reproduced. So to provide me with the
11 table that takes the utility capability factor and
12 changes it relative to the one that has been provided
13 in evidence and tell us how much that changes, plus
14 or minus, relative to the production you have
15 provided in evidence.

16 C. KEIZER: I think we are fine with that.

17 S. WALKER: Awesome. Thank you.

18 T. EMINOWICZ: Sorry, Mr. Walker. JT-2.18.

19 S. WALKER: Thank you.

20 S. WALKER: So I am somewhat in your hands as to
21 whether or not you prefer me to, once that is
22 provided, provide you with written clarifications,
23 Mr. Keizer, or whether that is something that we
24 might defer to the potential technical panel, as
25 recently instructed to us in Procedural Order Number
26 7 this -- earlier this week.

27 C. KEIZER: Well, Procedural Order Number 7
28 deals with a potential technical conference related

1 to expert witnesses and not related to OPG witnesses.
2 This is the technical conference for OPG witnesses,
3 so, you know, obviously, we would provide a response
4 to the undertaking, and to the extent that we don't
5 reach an agreement in July, I guess you could ask
6 your questions at the hearing.

7 S. WALKER: Okay. I guess what I am asking,
8 since it wasn't provided, is that will you -- will
9 you afford me the opportunity once it is provided to
10 ask some additional questions? And if those need to
11 be in writing, I think that is perhaps the only
12 practical, pragmatic way of addressing that. I mean,
13 excited to see you in July, Mr. Keizer, but...

14 C. KEIZER: Well, I would -- let me -- can I
15 just have a moment, and I will be right back with
16 you, Mr. Walker.

17 S. WALKER: Sure.

18 C. KEIZER: Okay. My understanding is that we
19 do have the attachment of the table, that it was an
20 oversight that it was not provided. So I think what
21 we are going to do at the break is obtain that table,
22 provide it to you. Obviously, you may need time to
23 digest it, but to the extent you have an opportunity,
24 I believe this Panel is continuing tomorrow. If you
25 have any follow-up questions, you could address them
26 at that time.

27 S. WALKER: That is perfectly acceptable. Thank
28 you, Mr. Keizer. Yeah, thank you. Awesome.

1 C. KEIZER: And so there is no undertaking in
2 that regard. We will just do it within the course of
3 this technical conference.

4 S. WALKER: I am agreed. Thank you.

5 Could I please have L-E2-OAPPA-11 brought up on
6 the screen, please. Maybe go to the questions.

7 Yeah, awesome. Okay. That is great. Thank you.

8 So this particular IRR deals with a vacuum
9 building outage scheduled at Darlington in 2027, the
10 first in our test year. And I do thank you for the
11 thoughtful answers you provided here. But I do want
12 -- I do feel it is important that I preface our
13 concern with this VBO, and it is what we perceive to
14 be a protracted duration for a month and a half next
15 year. And that is because this station is the only
16 one providing any nuclear electricity for the
17 Applicant in 2027. It is, therefore, burdened with
18 carrying the entire year's revenue requirement.

19 So I do want to delve into these questions --
20 this issue a little bit further. So can you identify
21 for me what are the consequences of delaying the VBO
22 until either the first refurbished unit at Pickering
23 is functioning or you have the new nuclear unit up
24 and operating?

25 K. CAREW: It is a license condition to inspect
26 the special safety system of our containment
27 structure at a preset frequency, which for Darlington
28 is 12 years. So one consequence would be the

1 inability to continue to operate, given we would not
2 be in compliance with our license conditions.

3 S. WALKER: I understand that at the surface
4 level, but would you be able to obtain a Canadian
5 nuclear safety council exception to delay the VBO?

6 K. CAREW: I cannot speak to what the CNSC may
7 not -- or may or may not approve. My understanding
8 would be that small movements less than six months
9 might be possible. But beyond that, I do not believe
10 that the CNSC would grant approval for the special
11 safety system inspection to be delayed.

12 S. WALKER: So in the context of what I just
13 described, that being there is no -- you know, there
14 is no electricity being produced out of it, did you
15 contemplate -- or why did you not actually accelerate
16 the VBO to this year while you still had Pickering
17 fully functional?

18 K. CAREW: The time that is up for the vacuum
19 building inspection is in 2027. At the -- at the
20 time of the scheduling, I don't believe that an
21 advantage was deemed possible or -- and so we elect
22 to execute that outage as scheduled in 2027.

23 S. WALKER: So if I heard you correctly, you are
24 saying that no consideration was given to accelerate
25 that schedule to this year?

26 K. CAREW: So, Mr. Walker, I would state that
27 for all of our outages, we carefully consider many
28 inputs as part of scheduling them. That would

1 include things like grid stability, the availability
2 of the necessary labour, materials, and parts that
3 are required, as well as the scheduling within our
4 own resource constraints as part of our business
5 planning. So I would say that as part of our normal
6 scheduling process, we have considered many
7 possibilities associated with placement of all of our
8 outages.

9 S. WALKER: I respect that it is complex, but
10 specifically, no thought was given to accelerating
11 the VBO into 2026? Electrical systems are
12 complicated. I respect that. Your assets are
13 complicated. Scheduling your materials are also
14 complicated. But you did not give consideration to
15 accelerating the VBO; do I hear that more correctly?

16 C. KEIZER: I think she answered the question,
17 Mr. Walker, in terms of what OPG's thinking and
18 contemplation was around planning of the outages. I
19 think you are trying to pin her down to a particular
20 answer and question, and I think she has provided the
21 best answer she can provide; otherwise, we are
22 starting to cross the line into cross-examination.

23 S. WALKER: And that is a fair comment, Mr.
24 Keizer. I will change the direction of my inquiry.
25 Thank you.

26 So you did a great job of sort of providing
27 references and cross-references to the Pickering,
28 Darlington, and the Bruce examples, et cetera.

1 And I don't know this, so I am asking: What are
2 the key structural differences in the vacuum
3 buildings between the two that you own, between
4 Pickering and Darlington? You can answer those in a
5 layperson's perspective too.

6 K. CAREW: I would say, nominally, the
7 structures are fairly similar. The one key
8 difference is the pressure relief duct at Pickering,
9 which is part of the containment system, is above
10 ground, and you can actually see the connections to
11 the vacuum building; versus at Darlington where that
12 is -- underground is, you know, under and not visible
13 outside of the station. Not only -- it is a large
14 concrete structure with supports inside and a water
15 tank inside with associated weirs and open to
16 pressure and, of course, spray headers.

17 So I will say fairly similar structures with
18 reasonable differences due to the difference in
19 design and size, et cetera.

20 S. WALKER: Okay, good. Thank you.

21 Is Pickering's more like Bruce's power vacuum
22 building or more like Darlington's?

23 K. CAREW: I don't know the answer to that.

24 S. WALKER: Okay. The reason I ask is that
25 there was lessons learned that you had identified
26 here in your response from the Bruce VBO outage.
27 Again, I was just looking for a layperson's
28 perspective on that as opposed to a --

1 K. CAREW: Was there a question?

2 S. WALKER: Yes. Sorry. Does the Pickering VBO
3 differ notably than the Bruce? So maybe that is a
4 little more pointed.

5 K. CAREW: Sorry. Your question is does the
6 Pickering VBO differ from the Bruce -- like, do you
7 have a particular VBO?

8 S. WALKER: I am so sorry. I didn't mean the
9 VBO. I meant the vacuum building itself. Not the
10 outage component. But is the Pickering vacuum
11 building similar to Bruce's?

12 K. CAREW: I would say all of our CANDU reactor
13 vacuum buildings have similar designs with minor
14 changes associated with materials, size, pipe
15 routing, et cetera. But by and large, fairly
16 similar.

17 S. WALKER: Okay. I mean, you describe those
18 elements of the Pickering unit that were outside. Is
19 that kind of the same as Bruce's, or is Bruce more
20 like Darlington?

21 K. CAREW: Given the evolution of reactor
22 designs within Ontario, the Bruce power vacuum
23 building would be more similar by virtue of the
24 progress of designs to Darlington than Pickering
25 would be to Darlington.

26 S. WALKER: Okay. Fair enough. Thank you.

27 So could I just please draw your attention to
28 the answer you provided in part C. So, Ms. Laundry,

1 if you could just roll down to the next page. Thank
2 you. Starting at line 11 there, I will draw your
3 attention to that.

4 So here you identify that your -- there is
5 another 118 valves that need to be overhauled or
6 replaced during the VBO. Maybe you can answer it,
7 great. If you need to take an undertaking, that is
8 fine. But can you please provide the expected
9 project duration for each of the three valve types?

10 K. CAREW: So just for clarity, you asked about
11 the duration of the projects for the valves that are
12 listed in response "Charlie"; is that correct?

13 S. WALKER: Correct. Yes, that is correct.

14 K. CAREW: And by "project," did you mean
15 project execution during the vacuum building outage
16 or project in general?

17 S. WALKER: Specific just to the vacuum building
18 outage, yes.

19 K. CAREW: One moment.

20 S. WALKER: Thank you.

21 K. CAREW: Okay. So if I could draw your
22 attention to response "Delta" which states that the
23 planned duration for the ECI valve replacements
24 during the Darlington VBO is 15 days.

25 S. WALKER: Yes.

26 K. CAREW: And the remaining valves would be of
27 similar or shorter duration.

28 S. WALKER: So 15 days or less?

1 K. CAREW: That is correct.

2 S. WALKER: Oh, okay. Perfect. Can they be
3 done concurrently with the ECI valves?

4 K. CAREW: At this point of the project, we are
5 in our refinement phases for the outage planning. As
6 you can appreciate, there are highly complicated
7 interactions with various systems, including simple
8 physical restrictions. There is only so many people
9 who can be in a certain area at one time. And so we
10 are working through the scheduling and -- to optimize
11 the best schedule for us to execute the required
12 scope.

13 And so at this time, I can't say everything can
14 be done in parallel. Certainly there will be degrees
15 of movement as we work through the project
16 definitions as well as the execution plans in the
17 outage.

18 S. WALKER: I respect that completely. Thank
19 you, Ms. Carew.

20 Which kind of leads into my next question. My
21 final question, by the way. I mean, you have -- what
22 a brave new world. You're using drones to do part of
23 this inspection. You identify that in your response
24 here. So -- and I appreciate that you are doing
25 that. But is there -- is there -- is there anything
26 that you can do in addition -- I know you mentioned
27 your refinement, but project management, critical
28 path scheduling, outage changes, or something that

1 will improve the duration of this outage to something
2 less than 46 days? Is that -- would that be a
3 reasonable goal to meet? You know, I mean, could you
4 get it back to something more historically
5 appropriate -- not appropriate, excuse me. I don't
6 mean that. But more like the 28 to 30 days that have
7 been completed historically?

8 K. CAREW: So as we work through our planning, I
9 can assure you we are looking for every opportunity
10 to make sure that we are ready to execute the work.
11 This includes the innovations that we pointed out
12 here and as well includes things like full staging
13 and planning travel routes, et cetera. So just to
14 reassure you on the degree of planning and effort
15 going into the execution of the vacuum building
16 outage.

17 I will say, however, in comparing vacuum
18 building outages from other stations, et cetera, that
19 it is not a like-for-like comparison. The scope of
20 the Darlington vacuum building outage with the
21 significant first-of-the-kind work, as well as these
22 important valves that need to be replaced do mean
23 that we require the scheduled as defined at this
24 time.

25 S. WALKER: Okay. Thank you, Ms. Carew. Thank
26 you, Panel.

27 Mr. Keizer, subject to maybe needing a little
28 bit of extra time with the Panel tomorrow morning

1 once I get those -- that UCF change table --

2 C. KEIZER: In that regard, Mr. Walker, I -- OPG
3 Staff has advised me that actually it was filed, and
4 it should be available to you on the RDS. It was
5 filed as part of a correction on May 22nd to a
6 correction to OAPPA 10, and Attachment 1 was
7 provided.

8 S. WALKER: Oh, rats. Of course it was. Okay.

9 C. KEIZER: So if you want to have a look at the
10 break, maybe, and then if you needed to ask something
11 this afternoon, in case you want to Friday off, then
12 that is up to you.

13 S. WALKER: I will not necessarily have such
14 luxuries, Mr. Keizer, but I appreciate the
15 opportunity. That is all the questions I have. Mr.
16 Millar, I will turn it back to you, sir.

17 M. MILLAR: Great.

18 S. WALKER: Thank you, Panel.

19 M. MILLAR: Thank you, Mr. Walker.

20 I think that takes us to OEB Staff, if I not
21 mistaken. And, Ms. Zhu, are you up first? Okay.
22 Over to you. Just for your planning -- I am actually
23 not sure who is up next for Staff. We are going to
24 look to take a break around 3:00, a little bit after
25 3:00, so whoever is asking questions, if we can just
26 find a natural pause around then.

27 **EXAMINATION BY T. ZHU:**

28 T. ZHU: Thank you, Mr. Millar. Good afternoon.

1 My name is Tina Zhu. I am a senior advisor from the
2 Ontario Energy Board. I have some questions around
3 the nuclear facilities FTEs and the labour costs
4 embedded in the OM&A budget.

5 First, could we pull up the F2-Staff-196,
6 please.

7 So in the interrogatory response, if we look at
8 part A, in the first paragraph, OPG responded that
9 augmented staff are not a part of the labour costs.
10 Further to this question, I explored your pre-filed
11 evidence from the Exhibit F2, Tab 2, Schedule 1 on
12 the Table 2A, and Exhibit F2, Tab 4, Schedule 1,
13 Table 2. You don't need to pull up these two tables,
14 but the two tables are showing the resource type in
15 the base OM&A and in the outage OM&A.

16 So on this resource tables, I see that the
17 augmented staff is listed as a separate line item.
18 So it is not part of the labour cost, and is not part
19 of the external purchased services.

20 C. KEIZER: I think it would be preferable if we
21 did have the tables to look at to confirm.

22 T. ZHU: Sure. Please. So the first table, F2,
23 Tab 2, Schedule 1, Table 2A.

24 So as you see on the table, the line from number
25 1 to number 3, that is what OPG refers to as labour
26 costs. And then line number 4 is showing augmented
27 staff. Then line number 7 is other purchased
28 services.

1 My first question is about the definition of
2 "augmented staff." So when OPG clarify and classify
3 what is the augmented staff costs, if it is not part
4 of the labour cost and not part of the external
5 purchased services cost, so how OPG would interrupt
6 where it reports and where it defines the augmented
7 staff costs?

8 M. EL DEFRAWY: Sorry, could you repeat that
9 question, please.

10 T. ZHU: So my question -- because in your
11 application, you have a clear definition what is
12 considered as your labour costs. So that is related
13 to the costs of your labour, FTEs. And the same
14 time, you provide evidence about your external
15 purchased labour costs. So that is part of your
16 external purchased services.

17 But what I see, I don't find a clear definition
18 where the costs from augmented staff is being
19 classified, whether this is part of the labour cost
20 or whether this is part of the external purchase,
21 because to me, it doesn't belong to either of these.

22 C. KEIZER: I think that there is -- in one of
23 the pre-filed exhibits -- what OPG Staff has advised
24 me is that F2-2-1, page 6, there is a definition of
25 "augmented staff."

26 T. ZHU: Thank you for pointing out the
27 definition.

28 So is it possible for OPG to provide for the

1 augmented staff what is the FTEs equivalent labour
2 hours that OPG utilized in the base OM&A and in the
3 outage OM&A from the nuclear facility?

4 M. EL DEFRAWY: So OPG does not track aug staff
5 on an FTE basis. It tracks it on a dollar basis. So
6 that would require conversion to determine the
7 specific FTEs associated.

8 Is there a specific time period or -- like, is
9 it the actuals that you are looking for? Or is there
10 something specific? Because that is not generally
11 how we provide that information.

12 T. ZHU: Is it possible that you could provide
13 the 2024 actual for the augmented staff FTEs?
14 Because why I come up with this question, this is
15 from another interrogatory response. If we could
16 pull up F2-SUP-012, please. If you could move down
17 to show Chart 1.

18 From the Chart 1, I can see that there were 44
19 augmented staff who participated in the 2024 nuclear
20 staffing benchmarking study. So, to me, that means
21 OPG was tracking the augmented staff at the FTE count
22 level. So I do want to understand for which part of
23 the augmented staff OPG tracks the number of FTE info
24 versus which part of the augmented staff, as you
25 suggested, OPG only tracks at the dollar spending
26 level.

27 M. EL DEFRAWY: So what I am referring to is
28 specifically actuals. We are able to track the

1 number of augmented staff that we have. For a
2 future-looking or forward-looking perspective, we
3 would not have the number of staff. We would have a
4 set budget associated with this particular resource
5 type.

6 T. ZHU: Could you further clarify? So for the
7 future periods, if you are able to develop a budget
8 with the augmented staff costs, wouldn't that costs
9 be developed based on the number of labour hours
10 times how much is the labour cost per hour? So if we
11 follow that thought, wouldn't OPG be able to estimate
12 how many FTEs will be purchased through augmented
13 staff procurement?

14 C. KEIZER: Ms. Zadeh may have a point of
15 clarification.

16 S. ZADEH: Sorry. Just for the Panel's
17 consideration. So one point of clarification is just
18 want to make sure that everyone notes that this is
19 pointing to head count, not FTE, on the page, Ms.
20 Zhu. So I think that is just important for
21 clarification for the record.

22 And, secondly, perhaps what we can do is take an
23 undertaking, and that undertaking, if we are able to
24 do the conversion that you are requesting, we will do
25 it. If not, we will explain why not. I think that
26 that would probably be a fair undertaking if that
27 would help satisfy your question.

28 T. ZHU: I think that is a reasonable

1 undertaking. So I do want to understand when you say
2 on the Chart 1, this is a head count, so that means
3 the 44 augmented staff. So when OPG calculates the
4 FTEs, they are based on the total of labour hours
5 divided by how many hours per week a full-time
6 employee typically would work. So the definition of
7 "head count" is different from the definition of
8 "FTE"; is that correct?

9 M. EL DEFRAWY: That is correct.

10 T. ZHU: Thank you. And I would appreciate the
11 undertaking, if not possible, I appreciate if you
12 could explain the reason.

13 M. EL DEFRAWY: Okay.

14 T. ZHU: And I also want to ask --

15 M. MILLAR: I need to mark the undertaking, Ms.
16 Zhu, or --

17 T. ZHU: Yes, please.

18 M. MILLAR: Okay. So that is JT-2.18. There
19 was actually quite a bit of back and forth on that.
20 Ms. Zadeh, you may have expressed it the most
21 clearly, but I just want to make sure you and Ms. Zhu
22 are on the same page.

23 S. ZADEH: My understanding is that Ms. Zhu is
24 asking for a conversion of the OM&A dollars for
25 augmented staff on an FTE basis. And we were going
26 to take that away, and if it is -- we are able to do
27 it, we will do it. If we are not, we will explain
28 why not.

1 T. ZHU: Thank you. Because from the earlier
2 conversation, you mentioned that you are able to do
3 it for the actual augmented staff costs that happened
4 in the historical year, so I would definitely
5 appreciate that to be provided. For the future
6 years, if it is not possible to convert into FTE
7 number, I understand.

8 S. ZADEH: And sorry. I think that went to my
9 clarification. So I believe what the witness said
10 was that historically there is a head count number,
11 not an FTE number. So -- but I will let the witness
12 clarify if I am wrong.

13 M. EL DEFRAWY: Thank you. That is correct.
14 What I was referring to is head count for the actuals
15 for the augmented staff. So we do have the actual
16 numbers associated with the head count on premise.

17 T. ZHU: Okay. Thank you.

18 M. MILLAR: Okay. So that undertaking is JT-
19 2.18.

20 **UNDERTAKING JT-2.18: PROVIDE A CONVERSION OF**
21 **THE OM&A AUGMENTED STAFF COSTS INTO FTE**
22 **EQUIVALENTS, PROVIDE THE AVAILABLE AUGMENTED**
23 **STAFF HEAD COUNT INFORMATION, AND IDENTIFY WHERE**
24 **IN THE PREFILED EVIDENCE THE COSTS OF AUGMENTED**
25 **STAFF BEING CAPITALIZED ARE SHOWN**

26 T. ZHU: My next question, for all the augmented
27 staff costs, are they all treated as OM&A? Is any of
28 the cost being capitalized?

1 M. EL DEFRAWY: That is incorrect. Not all aug
2 staff would be OM&A. That would be dependent on the
3 program that is bringing in the specified staff.

4 T. ZHU: Thank you for that clarification.

5 Would you be able to point out if you already
6 filed in your pre-filed evidence where it is showing
7 the costs of augmented staff that is being
8 capitalized? And if this is not provided, would you
9 be able to take it as an undertaking and provide such
10 figure?

11 J. PEREIRA: Could we clarify if the question is
12 aug staff that have been actualized so far or
13 planned?

14 T. ZHU: Both.

15 S. ZADEH: Sorry. I was going to offer, if
16 helpful, we can maybe roll it into that previous
17 undertaking, Ms. Zhu.

18 T. ZHU: Okay. Thanks.

19 Could OPG also confirm -- in the pre-filed
20 evidence and in the interrogatory responses, all of
21 the augmented staff costs, they are either in the
22 base OM&A or in the outage OM&A, so nowhere else in
23 the OM&A budget that has embedded augmented staff
24 costs. Could you please confirm, or if this is not
25 the case, could you explain? Thank you.

26 J. PEREIRA: [Indiscernible] confirmed our OM&A
27 budget would go beyond just base and outage OM&A. We
28 also have project OM&A within the nuclear program.

1 And if aug staff are required to support that
2 program, they would be planned and charged to the
3 project OM&A budget as well.

4 T. ZHU: Thank you.

5 So according to my reading of your tables, I see
6 in the programs, for example, the Pickering cyclical
7 maintenance program, although there is a line showing
8 augmented staff, the figures, they are showing as
9 zero. So that is why I wanted to ask if the main
10 costs of augmented staff, they are either in the base
11 OM&A or in the outage OM&A.

12 J. PEREIRA: Could you please pull up your
13 reference and clarify your question again, please.
14 Thank you.

15 T. ZHU: I believe that is from the exhibits of
16 the outage OM&A and the Pickering cyclical
17 maintenance OM&A, because I don't have that right
18 front me right now. I believe either F3 or F4, but I
19 can -- I can get it back to you later, if that is
20 okay.

21 C. KEIZER: That would be best, I think, because
22 we just want to make sure we are not --

23 T. ZHU: Sure. I will --

24 C. KEIZER: If you have got a particular
25 reference, yeah.

26 T. ZHU: So let me continue my next question.

27 Could we go to F2-Staff-196. In the response,
28 move down to Chart 1, please. So in the Chart 1, OPG

1 provides a calculation. In the calculation, the sum
2 of labour costs within base OM&A grows by 51.2
3 percent, and the nuclear facility base OM&A FTE count
4 grows by 30.8 percent. And this is between 2027 to
5 2031, so in a four-year period.

6 If I calculate by simple math using 1.045 raised
7 to the power of 4, I get to an increase around 20
8 percent. So could you please confirm if my
9 calculation is reasonable that the annual labour cost
10 escalation assumed per FTE between 2027 to 2031 is
11 around 4.5 percent per year?

12 C. KEIZER: Could we just have a moment, please.

13 I think -- given the nature of your question and
14 the calculation you are asking us to confirm, I think
15 it is difficult to do that just sitting on the stand,
16 so I think it would be preferable if we do that by
17 way of undertaking, as you have described it.

18 T. ZHU: I think that would be good. Thank you.

19 M. MILLAR: So it is JT-2.19. We are clear on
20 what the undertaking is?

21 C. KEIZER: Well, I think what -- she had set
22 out the formula. Particularly, she lost me when she
23 was talking to the power of 4. But she had set it
24 out, I think, fairly succinctly, and we should be
25 able to retrieve it from the transcript. But I think
26 it is, in effect, to try to confirm her calculation
27 is an increase of 4.5 percent, based on -- as she
28 described it in the transcript.

1 M. MILLAR: Thank you. So JT-2.19.

2 **UNDERTAKING JT-2.19: CONFIRM THE CALCULATION**
3 **THAT THE ANNUAL LABOUR COST ESCALATION ASSUMED**
4 **PER FTE BETWEEN 2027 TO 2031 IS AROUND 4.5**
5 **PERCENT PER YEAR**

6 T. ZHU: And now can we open F2-Staff-180,
7 please. Could we move to the Chart 1 from the
8 response. In the Chart 1, it shows a breakdown of
9 OPG's maintenance FTE -- sorry. That is from the
10 other place. So, first, on this chart it is showing
11 that 166 planned maintenance external purchased
12 service FTEs were excluded from the nuclear staffing
13 benchmarking. So that is the live reading plant
14 maintenance; 98, 68, and the 166. So the total
15 number of exclusion is 166.

16 And the next, could we open up the interrogatory
17 response from F2-SEC-164, Attachment 2, page 1,
18 please. The table shows the breakdown of OPG's
19 maintenance FTEs from the live reading, maintenance
20 planning to line maintenance support. And this table
21 is presented after the exclusion of 166 planned
22 maintenance FTEs that we just looked from two minutes
23 ago.

24 As an undertaking request, could OPG identify,
25 using the table in F2-SEC-164 interrogatory response,
26 Attachment 2, page 1, which job functions the 166
27 excluded FTEs would fall under had they not been
28 excluded from the benchmarking study?

1 M. EL DEFRAWY: So just to confirm the question,
2 it is which Indeavour functions would have been
3 associated with the 166 planned maintenance
4 exclusion?

5 T. ZHU: That is correct. Because on the table,
6 there are one, two, three, four, five, five different
7 job functions under "maintenance." So I was hoping
8 if OPG could allocate the 166 into the five job
9 functions had they not been excluded from the
10 benchmarking study.

11 C. KEIZER: I guess I am just struggling with
12 the question issue in terms of if it was excluded
13 from the study, you now want to re-include them into
14 the study; is that what you are asking to do?

15 T. ZHU: Yes, that is my original asking. Or if
16 OPG thinks it is impossible to map the people back
17 into the table, would OPG provide an explanation why?

18 C. KEIZER: Sorry. The witness was reaching for
19 the --

20 M. EL DEFRAWY: So I just wanted to clarify,
21 these planned maintenance exclusions and all the
22 other exclusions in the other IR that you referred to
23 were excluded primarily because we were not able to
24 obtain purchased services information from other
25 peers that we benchmarked against. Including them in
26 this information would not be appropriate because it
27 would not maintain an apples-to-apples comparison
28 between OPG and the other peers that we benchmarked

1 against.

2 T. ZHU: I understand the -- where you are
3 coming from, but from the same interrogatory
4 response, F2-SEC-164, page 4. Under the section
5 saying "variances above benchmark," the second point,
6 it says:

7 "U.S. plants may utilize a different operating
8 model where different functions are contracted out,
9 specifically during outages where a substantial
10 portion of the work is done." [as read]

11 Because I personally got a little bit confused,
12 because here OPG is saying that its maintenance
13 functions are above the benchmarking, is because OPG
14 maintains more of the in-house maintaining functions
15 versus the U.S. plants; they are contracting those
16 functions out. So, to me, when you did the
17 benchmarking study, you were comparing that apples to
18 apples, and now you are suggesting the 166 exclusions
19 was being excluded because you wanted to make sure
20 that you were comparing apples to apples for the
21 outside purchase, outside contracted maintenance,
22 that you didn't include them.

23 So if that was the reason, I want to validate if
24 the explanation here about the U.S. plants is still a
25 valid explanation for why OPG's maintenance staff is
26 above.

27 M. EL DEFRAWY: Yeah, I can help explain that.

28 Can we go to, in the same IR, SEC-164,

1 Attachment 1, page 8 of 22. So this table here
2 outlines the exclusions for the benchmarking
3 methodology, and what the previous reference was
4 referring to is that other, like, PWRs, they
5 generally do most of their work within outage. That
6 is when most of the work is done. They also happen
7 to outsource that work. Well, really, that is -- in
8 general is an exclusion.

9 So, like, if you look at it, like, what we have
10 here, line 2, we exclude the outage execution
11 activities. So, in general, PWRs would benefit from
12 that exclusion more so than OPG, which has a big
13 online maintenance component. And that is really
14 what that was referencing.

15 T. ZHU: Thank you for that explanation.

16 As a follow-up question, what is the labour cost
17 differential between maintaining an in-house outage
18 maintenance FTE versus hiring an augmented staff from
19 outside to do the outage maintenance work?

20 M. EL DEFRAWY: Just one moment, please. I
21 believe there was an IR for a different Panel, so I
22 am just trying to see if I could retrieve that. I
23 believe, if I am not mistaken, Staff-209 would have
24 that information.

25 T. ZHU: Thank you for pointing that out, and I
26 will check that later.

27 And now could we move to the pre-filed evidence;
28 Exhibit F2, Tab 1, Schedule 1, Table 2A. This is a

1 new topic. I think I referred to F2, Tab 1, Schedule
2 1, Table 2A, please. On this table, line 24,
3 subtotal Pickering refurbishment program shows over
4 2,600 FTEs are budgeted for Pickering refurbishment
5 program in 2027 to 2030. As a comparison, on the
6 same table, line number 18, subtotal Darlington
7 refurbishment shows only 700 to 800 FTEs were
8 utilized in the Darlington refurbishment program in
9 2020 to 2025.

10 My first question, could you explain why so many
11 more FTEs are budgeted for Pickering refurbishment
12 program compared to the Darlington refurbishment
13 program?

14 J. BLAZANIN: So perhaps I can provide some
15 context for you, and then I will turn it over to my
16 colleague, Mr. Pereira, who can fill in some of the
17 details.

18 So when Darlington refurbishment was being
19 undertaken, we were doing so while that unit -- while
20 the units were operating. In effect, we would take
21 one unit offline, and we would operate the other
22 three. One unit would be in a refurbishment.

23 So operations and maintenance staff that were
24 required to execute scopes of work during that
25 refurbishment at Darlington or a certain percentage
26 of them would be associated with the Darlington
27 refurbishment project. So you are executing one unit
28 at a time or potentially two units at a time, but no

1 more.

2 At Pickering, fuel channel dictates the end of
3 life for the plant. The plant will be shutting down
4 in September of this year entirely, so all four units
5 will not be in operation like Darlington was. And at
6 that time, that staff will transition over to the
7 refurbishment program to execute four units of
8 refurbishment scope, which is uniquely different than
9 what was being undertaken at Darlington.

10 T. ZHU: Thank you for the explanation.

11 Could you further explain -- because both the
12 Pickering and the Darlington refurbishment programs,
13 they are scheduled for similar time duration if your
14 explanation is suggesting that the Pickering
15 refurbishment program would require significantly
16 more person hours of labour and efforts compared to
17 the Darlington refurbishment program on a per unit
18 basis?

19 J. BLAZANIN: A lot of the scope of work that is
20 going to be undertaken, one example would be
21 preventive maintenance tasks, so there are
22 modifications that are occurring within the scope of
23 the refurbishment project, but there are also support
24 staff, preventative maintenance tasks that are being
25 undertaken as part of during the refurbishment.

26 And so a lot of that maintenance activity would
27 have been done between operating units and
28 refurbishment units at Darlington. If you were to

1 look at the total Darlington staff complement and the
2 refurbishment complement, you can look at it
3 together. In this case, all of that work is
4 happening while all four units are down. So between
5 2027 and 2031, effectively all four units are shut
6 down at Pickering. So it is, again, a uniquely
7 different scenario here.

8 T. ZHU: Thank you for the explanation. I
9 appreciate it.

10 Hello, Mr. Millar. Should we take a break now?

11 M. MILLAR: Yeah, we are at about 3:00, so why
12 don't we break until 3:15.

13 --- Recess taken at 2:58 p.m.

14 --- Upon resuming at 3:15 p.m.

15 M. MILLAR: We will continue with the questions
16 from Ms. Zhu.

17 C. KEIZER: And just before Ms. Zhu continues, I
18 believe that one of the witnesses has some
19 supplementary information to provide in respect of
20 one of the questions that was asked by Ms. Zhu.

21 J. BLAZANIN: Thank you for that. I just wanted
22 to make sure that I gave you a wholesome answer. I
23 might have left a few things out last time around the
24 FTEs, particularly at Pickering compared to the
25 Darlington refurbishment.

26 So we are leveraging the Pickering resources or
27 need to utilize the Pickering resources ops and
28 maintenance to execute certain functions during the

1 refurbishment outage.

2 At Pickering, as I mentioned, all four units are
3 down, so that number is significantly larger than we
4 would have been utilizing at Darlington when a single
5 unit was in refurbishment for example.

6 However, in addition to that, there are
7 modifications in scopes of work that we are also
8 leveraging the PWU maintenance staff to execute
9 during the Pickering refurbishment. This has
10 provided us an opportunity, with all four units being
11 down, that we can also leverage those resources to
12 execute specific modifications which traditionally or
13 jurisdictionally would belong to EPSCA trades or BTU.
14 So that helps alleviate part of our resource risks
15 that we have with trade resources during this eight
16 or nine-year refurbishment period as well. So it is
17 an opportunity for us. I just wanted to make sure
18 that you had that clear picture.

19 T. ZHU: Thank you very much for the additional
20 info.

21 Could we take a moment to revisit the augmented
22 staff question that I was going to take away and I
23 was going to show the tables.

24 Could we go Exhibit F2, Tab 4, Schedule 1, Table
25 2, please. As we can see on the table, line number
26 4, augmented staff, from 2026 budget to 2031, all the
27 numbers are showing zero.

28 And now could we go F2, Tab 4, Schedule 1, Table

1 3, please. So, again, on the table, line number 4,
2 augmented staff showing all zeros from 2026 to 2031.

3 So back to my original question. I was asking
4 if OPG could confirm, in the pre-filed evidence and
5 in the interrogatory response, if all the augmented
6 staff costs are being embedded either in the base
7 OM&A or in the outage OM&A.

8 M. EL DEFRAWY: Sorry. Just to confirm, the
9 question is that -- do we have any augmented staff
10 planned for base or outage OM&A in the 2027 to 2031
11 period; is that correct?

12 T. ZHU: I think let me redefine the scope. So
13 I am talking about the OPG's OM&A budget. So in the
14 OM&A budget, from 2026 to 2031, for everything that
15 OPG presents for the augmented staff costs, are they
16 either being presented in the base OM&A or they are
17 being presented in the outage OM&A? Is there
18 anywhere else that also has a pre-filed evidence or
19 interrogatory response about the augmented staff
20 costs in OM&A?

21 M. EL DEFRAWY: No, there is not.

22 T. ZHU: Thank you for that confirmation.

23 Now I want to move to a different topic. It is
24 about the 2025 nuclear staffing benchmarking study
25 performed by Indeavor. Could we first go F2-Staff-
26 181. Could we move to the next page so we can see
27 the Chart 1.

28 Under Chart 1 there is a line saying:

1 "Plus adjustments to align with EUCG staffing
2 definitions, OPG security policy, and the timing
3 differences."[as read]

4 The number is showing 1,618.3.

5 My first question. Is it possible for OPG to
6 break down the 1,618.3 into three numbers to show how
7 many FTEs for aligning with EUCG staffing definition,
8 for OPG's security and policy, and timing differences
9 respectively?

10 C. KEIZER: Sorry. I just would direct you to
11 the footnote number 1 that it is -- why it is
12 provided on an aggregated basis, because it is unable
13 to disclose the information separately for security
14 staff.

15 T. ZHU: So I understood that part was to
16 explain about the OPG security policy, but would that
17 also explain the adjustments to align with the EUCG
18 staffing definition or the timing differences?

19 C. KEIZER: Yeah, I think the issue is if you
20 have those two others, you can back out and get the
21 OPG security -- security staff.

22 T. ZHU: I don't know if I quite understand that
23 explanation. So where I am coming from, if you see
24 the second line in the same chart, it is saying that
25 there is 2,563 staff not benchmarked by Indeavor. So
26 my understanding from why these people are excluded
27 is because their job functions could not be mapped --
28 or could not be matched to the Indeavor's definition.

1 If that is correct, then I want to further ask,
2 then, why there is another subset from the 1,618.3
3 that were also excluded from the benchmarking study?
4 And the part of the reason is because for aligning
5 with the EUCG staffing definition, could you explain
6 what is the difference and why the 2,563 number
7 doesn't include a subset of the 1,618.3, which the
8 adjustment is for aligning the staffing definition?

9 M. EL DEFRAWY: So to confirm the question, it
10 is basically why do we have two separate adjustments;
11 one is the 2,563, and the other one is it the 1,618.

12 So I could maybe explain that a bit further. So
13 in terms of the Indeavor benchmarking study, a lot of
14 the information as well is part of the EUCG
15 information that I submitted. Prior to submitting to
16 EUCG, there are exclusions that we would need to make
17 in order to be able to align with the overall EUCG
18 definitions. So that is basically the line for
19 1,618.

20 In terms of the 2,563 number, that is to align
21 with the overall exclusions per the Indeavor. So
22 they have taken that information that is basically --
23 or that is within EUCG, so the EUCG benchmarking or
24 the EUCG numbers that are submitted -- or the OPG --
25 to be clear, the OPG numbers that are submitted to
26 EUCG. And then they do further exclusions that are
27 in the report, the prior page in the -- in CCC -- or
28 SEC-164 that we were at. That page 8, I believe. So

1 if we can go to that.

2 So these functions that are shown here, they may
3 be submitted as part of EUCG, but they are excluded.
4 That is what would be in reference to the 2,563
5 number that is referenced. So, for example, sticking
6 to the -- what we discussed previously, outage is
7 excluded in terms of the Indeavor study; however, it
8 is submitted in general to EUCG.

9 And perhaps the last point I want to make is
10 that the previous IR that you referenced is trying to
11 do a reconciliation of the FTEs. So it is showing
12 the various items to arrive at that overall OPG
13 nuclear FTEs.

14 T. ZHU: Thanks for the explanation.

15 Could we go back to Chart 1. Chart 1 of F2-
16 Staff-181. So I just want to confirm if I understood
17 this correct.

18 So the 1,618.3 exclusion is because of OPG's
19 security policy that OPG asked to exclude this number
20 of FTEs from the study, versus the 2,563 number that
21 would be excluded is purely because the Indeavor's
22 definition and how well or how bad that they could or
23 couldn't map those job functions of the FTEs into
24 their benchmarking. If that is the correct
25 understanding?

26 M. EL DEFRAWY: No, that is incorrect. So the
27 1,618 is the various items that are described there.
28 So it is items associated with EUCG exclusions, the

1 security policy, as you noted, as well as timing
2 differences.

3 The 2,563 FTEs, those are exclusions that might
4 be reported into EUCG, but in order to normalize
5 different utilities to one another, they do various
6 exclusions. Like, as we mentioned, outage is one,
7 capital is another one. As we saw on the previous
8 chart. So that is the difference between the two
9 sets of numbers.

10 T. ZHU: Could we go back to the previous chart?
11 So on this chart, the line number 4, the rationale,
12 it says:

13 "Excluded to remain compliant with OPG security
14 policy." [as read]

15 So according to your explanation, these
16 exclusions are in the 2,500-something of that
17 exclusion, but that OPG's security policy, it also
18 showed up in the 1,618 exclusion. So that is why I
19 wanted to clarify how the exclusions were determined.

20 M. EL DEFRAWY: So overall, there is two
21 different sets of security, as shown here on this
22 exclusions. There is security which refers to
23 security operations, which no utility submits,
24 generally, and security support, which there are
25 utilities that submit that, and OPG used to submit
26 that to EUCG as well. That is overall excluded here.
27 So that is -- I am hoping I am answering the
28 question. Is that the question?

1 T. ZHU: So I think what I was hearing, all of
2 the exclusions being explained on this page is
3 referring to the 2,500 exclusion. If we go back to
4 Chart 1, please.

5 So the reasons that we just saw from the
6 benchmarking study and report is trying to explain
7 the 2,563 exclusion; is that correct?

8 M. EL DEFRAWY: That is correct.

9 T. ZHU: Yes. So that leads to my question.
10 Because on this same chart, down below for the
11 1,618.3 exclusion, it also has the reason saying the
12 OPG security policy.

13 C. KEIZER: And, sorry, is -- your question is
14 are those the same things? In other words, are you
15 double counting the OPG security policy in two
16 separate -- two different exclusion numbers?

17 M. EL DEFRAWY: So I can answer that. So thank
18 you for that clarification. No.

19 It is not being double counted. So one is
20 support, and one is operations.

21 T. ZHU: And back to the conversation earlier.
22 Because OPG indicated it is impossible to further
23 break down the 1,618.3 number into three numbers to
24 explain the three adjustments respectively, so I just
25 want to confirm if that is the case.

26 C. KEIZER: Sorry, I was just distracted for a
27 moment. Your question is why we can't? Or is --

28 T. ZHU: Why you can't, and if you could confirm

1 that you cannot.

2 C. KEIZER: Because OPG security policy, those -
3 - that security staff and related to that, that is a
4 permanent redaction because of, you know, nuclear
5 security. So as a result, we are not even able to
6 provide it in confidence. And if we provide you the
7 other two, then you will understand the third.

8 T. ZHU: I see. And could you explain a little
9 bit more about the timing differences? So what is
10 the cutoff date that OPG provided the FTE data to
11 Endeavor? And what was the cutoff date that I --
12 that OEB Staff referred in the preamble of this
13 interrogatory?

14 M. EL DEFRAWY: So overall, the date is for
15 2024, so that is the cutoff date, at year end. Does
16 that answer your question?

17 T. ZHU: If the date is, say, December 31st,
18 2024, both, so why there is a timing difference in
19 the Chart 1?

20 M. EL DEFRAWY: Yeah, I can help explain that.
21 So it is really to reconcile the information that is
22 provided at a head count basis to an FTE basis. So
23 that is really what the timing differences alludes
24 to.

25 T. ZHU: Thank you for that answer.

26 I think now we can move to a different topic.
27 Could we go F2-Staff-216, please. Could we look at
28 the Table 1 from the interrogatory. Table 1, so one

1 page above. So in this table, there is the line
2 reading:

3 "Total of other purchased services, ref 2 and
4 3."[as read]

5 So these numbers are being confirmed by OPG in
6 the interrogatory response.

7 If we move to the response itself, OPG is saying
8 that the line reading:

9 "The total OM&A purchase services expenditures
10 at Reference 1 reflects base OM&A, outage OM&A, and
11 the project OM&A."[as read]

12 So that is from the response, line number 14 to
13 line number 16.

14 And from line number 12 to 13, OPG also
15 responded that:

16 "The values in the total of other purchase
17 services, Reference 2 and Reference 3, reflects base
18 and outage OM&A only."[as read]

19 So according to OPG's response, if we go up to
20 Table 1, please, that means the line saying ref 2 and
21 3 only contains base and outage OM&A versus the last
22 line in the table is showing the outage base and the
23 project OM&A. So that interpretation would be the
24 numbers showing in the last line of the table should
25 be bigger than the numbers showing in the second-to-
26 last line of the table. But as we can see in the
27 table, the values are showing the opposite. So could
28 you explain this conflict?

1 M. EL DEFRAWY: Can we go to line 17, please, in
2 part B? Yeah, just the second page. Thank you.

3 So what the -- the total OM&A number that you
4 are referencing is for purchased services that exceed
5 20 million. That is why you are not seeing -- that
6 is why you are seeing kind of that delta that you
7 would have expected when you had the base outage and
8 project OM&A summed up to be larger than just the
9 base and outage.

10 T. ZHU: So for the threshold of exceed 20
11 million, is that threshold applied differently? If
12 we go back to [indiscernible] please.

13 So wouldn't the numbers showing in the first
14 line and the second line of the table have also
15 incorporated that those are from the purchases above
16 20 million?

17 M. EL DEFRAWY: That is incorrect. Those do not
18 have a threshold whereas the reference one does have
19 that threshold.

20 T. ZHU: Thank you for that clarification.

21 Is it possible to provide the total OM&A
22 purchase expenditures that doesn't have this
23 threshold?

24 M. EL DEFRAWY: So can we go to CCC-78, please.
25 And if we scroll to Chart 1. So subject to check, I
26 believe Chart 1 has the requested information.

27 T. ZHU: So could you confirm that all the
28 numbers provided here doesn't have the 20 million

1 threshold?

2 M. EL DEFRAWY: I could take that back and
3 confirm at the break.

4 T. ZHU: Thank you. That would be great.

5 And now we can move to the next question. Could
6 we go F2-Staff-180, please. Can we look at the Chart
7 1 from the response. In the chart, it is showing
8 that 310 FTEs as external purchased services FTEs
9 were excluded from the 2025 nuclear staffing study.
10 And now could we also pull up the SUP-010, please.
11 If we can look at the OPG's response, it is saying
12 that the total costs for the requested external
13 purchased services FTEs, as provided in LF-2-Staff-
14 180, is 88.8 million.

15 So my first question, if I calculate, using a
16 simple math, 88.8 million divided by 310 FTEs, the
17 cost per external purchased service FTE is around
18 288K. Could you confirm if this calculation is
19 reasonable or not?

20 M. EL DEFRAWY: No. I do not think that that
21 would be reasonable due to the fact that purchased
22 services is more than just FTEs or people
23 necessarily. It is for purchased services as well
24 that are provided. So it cannot necessarily be
25 translated to an FTE basis.

26 T. ZHU: I want to clarify. So in front of this
27 interrogatory response, it is saying that the 88.8
28 million is the estimated total cost for the requested

1 external purchased services FTEs, so that is
2 specifically to the FTE costs?

3 M. EL DEFRAWY: That is correct.

4 T. ZHU: So as an undertaking request, could you
5 provide a few external purchased services job
6 functions and the average purchase cost per FTE for
7 these job functions that would support or against the
8 288K per FTE, as I just calculated here.

9 M. EL DEFRAWY: Yes, we can undertake to do
10 that.

11 T. ZHU: Thank you.

12 M. MILLAR: That is JT-2.20.

13 **UNDERTAKING JT-2.20: PROVIDE A FEW EXTERNAL**
14 **PURCHASED SERVICES JOB FUNCTIONS AND THE AVERAGE**
15 **PURCHASE COST PER FTE FOR THESE JOB FUNCTIONS**
16 **THAT WOULD SUPPORT OR GO AGAINST THE 288K PER**
17 **FTE**

18 T. ZHU: Thank you. That concludes my
19 questions. Thank you so much for your time.

20 M. MILLAR: Tom, it is over to you, I think.

21 T. EMINOWICZ: Thank you. Just give me a second
22 here to get to my notes.

23 **EXAMINATION BY T. EMINOWICZ:**

24 T. EMINOWICZ: Okay. Thank you very much. Good
25 afternoon, Panel. My name is Thomas Eminowicz, and I
26 am a senior advisor with Ontario Energy Board Staff.
27 I have two general areas to ask about today. And so
28 I am going to start with trying to understand some of

1 the outage planning and scoping. I think it will be
2 relatively apparent kind of what I am asking about,
3 but just to kind of give some visibility to the
4 context, I am trying to understand kind of how work
5 moves around between outages or between years.

6 So to start off, can we please see the
7 interrogatory response to E2-Staff-159. And so in
8 part A here, the question is asking about some
9 specific Unit 2 turbine work that was deferred from
10 2025 to 2027. And if I could please start off by
11 looking at the response. I just -- I just wanted to
12 make sure I understand some of the key words in the
13 response here.

14 So starting with -- at line 29 there, there is -
15 - there is the mention of managing resource
16 constraints, and I just would like to confirm, like,
17 what resources are we talking about? Are these,
18 like, maintenance resources that would be used for
19 the outage that are, like, OPG resources, or are we
20 talking about, like, IESO supply resources?

21 K. CAREW: The resource constraints that are
22 referred to in this response are the maintenance and
23 vendor resources to execute the work at the
24 Darlington station and -- yeah.

25 T. EMINOWICZ: Are you able to elaborate just
26 generally what those resources could have been doing
27 that led to the constraint?

28 K. CAREW: So at the time, we were in the

1 refurbishment project and working on similar turbine
2 control upgrades to Unit 4, and Unit 1 had just
3 concluded, and so -- and then coupled with the other
4 programs with refurbishment as well. So there is a
5 lot of resources. It is, I will say, a very busy
6 station.

7 T. EMINOWICZ: Thank you.

8 And the other thing I wanted to just make sure I
9 understood in this response is in the last line
10 there, line 32, it references a Pickering planned
11 outage. And I am just curious if you are able to
12 confirm whether or not that Pickering planned outage
13 that was at this time, like, causing this conflict --
14 or contributing to this conflict was aligned with the
15 OEB-approved production forecast from EB-2020.

16 K. CAREW: So just to confirm, your question is,
17 was the Pickering planned outage referenced here part
18 of the OEB-planned production forecast for 2025?

19 T. EMINOWICZ: Yes.

20 K. CAREW: I will take that as an undertaking
21 just to validate. I don't have that handy.

22 T. EMINOWICZ: Thank you.

23 C. KEIZER: We just need a number, sir.

24 M. MILLAR: So that is an undertaking. JT-2.21.

25 K. CAREW: Actually, on review, we do have that
26 information. My colleague, Mr. El Defrawy, will
27 provide you with it.

28 M. EL DEFRAWY: So, yes, this -- this was part

1 of the OEB-approved application for EB-2020 for the
2 Pickering outage.

3 T. EMINOWICZ: Perfect. Thank you so much.

4 The next thing I would like to have on the
5 screen related is --

6 C. KEIZER: Sorry. Just by way of housekeeping,
7 then, is -- that eliminates that undertaking;
8 correct?

9 M. MILLAR: That answers that response, so --

10 T. EMINOWICZ: Yes, it does.

11 M. MILLAR: -- we will count JT-2.21 as not yet
12 marked.

13 C. KEIZER: Thank you.

14 T. EMINOWICZ: Thank you.

15 So E2-SEC-141, please, Attachment 1. If we
16 could, yeah, scroll so that we could see 2025,
17 please, and 2026 together. And so just because the
18 column headings are not visible, the right-most
19 column is kind of what actually happened, and then
20 the one with the numbers is -- is -- or with higher
21 numbers is what was in the OEB-approved.

22 So I just wanted to first just ask, if you are
23 able to respond on the spot here, can OPG explain
24 what led to the deferral of the 2026 Unit 2 outage
25 that is listed there as D262?

26 M. EL DEFRAWY: So the 20 days for D262 was a
27 contingency outage following the TG controls planned
28 outage in D25 -- in D2521.

1 T. EMINOWICZ: Thank you.

2 And so were there -- were there opportunities to
3 try and do this turbine work in 2026 that OPG didn't
4 explore; like, if you didn't, why not? Or if there
5 were choices made to, like, not do it in 2026 because
6 you had reasons, are you able to kind of elaborate on
7 that?

8 K. CAREW: Yes, we can. So the Darlington
9 planned outage schedule for Unit 2 is the -- it is
10 the 36-month frequency for which we had an outage in
11 D -- in 2024. So the next opportunity to execute the
12 project is in the next 36-month planned outage in
13 2027.

14 We did evaluate that. It would not make sense
15 to pull ahead that planned outage to execute the
16 project in 2026, but rather to place the project
17 within that normally scheduled outage in 2027.

18 T. EMINOWICZ: And so what do you mean by "it
19 wouldn't make sense"?

20 K. CAREW: Well, the outage frequency we have is
21 the 36-month outage frequency, and so to -- like, it
22 makes sense to stick to that frequency, which is tied
23 to the license and regulatory preventative
24 maintenance activities and inspections that are
25 required.

26 T. EMINOWICZ: Thank you.

27 So, next, I would like to please -- I would like
28 to kind of just try and understand more about kind of

1 the decisionmaking about moving scope more generally,
2 and so I think a good place to just orient is Exhibit
3 E2-1-2, Table 1. Thank you. And so this is kind of
4 just a general question. So the table is kind of
5 looking at -- or showing what the OEB-approved
6 production outage plans and result in production were
7 and what actuals were.

8 And so just -- I would like to know just
9 generally, the people who are responsible for, like,
10 planning and executing these outages, like, how much
11 -- like, do they know what the OEB-approved
12 production forecast and outages are? Like, for the
13 people who are doing, like, outages in 2026, like,
14 are they agnostic to what the OEB has approved for
15 2026 in EB-2020-0290?

16 M. EL DEFRAWY: Yes. As part of our generation
17 planning process, stakeholders that are involved with
18 the overall generation planning are aware of the
19 overall OEB-approved durations and production.

20 T. EMINOWICZ: So, like, the people planning
21 2026 would have some sense of what the OEB had
22 approved for 2026 in EB-2020?

23 M. EL DEFRAWY: I think we would need to clarify
24 what specifically you mean, "the people planning." I
25 don't -- I wouldn't necessarily expect everyone
26 associated with planning the outage to be aware of
27 the OEB-approved durations, but there are certainly
28 folks that are aware of the OEB-approved durations.

1 T. EMINOWICZ: Yeah, thank you. There was an
2 attempt at a repeat back. Thank you very much.

3 So, next, can we please go to interrogatory
4 response A1-Staff-008, and I guess I will just say I
5 really appreciate the level of information on -- and
6 probably effort that this took. It was very
7 informative. So thank you for that.

8 I would like to focus, for the purposes of this
9 question, to Chart 1, please. Thank you. So just
10 looking at this chart, I just take away that during
11 the execution of an outage, there are a lot of
12 decisions that need to be made. I guess I will start
13 by confirming that "rejected" means that somebody is
14 trying to bring forward for consideration the
15 addition of scope to the outage, but the decision is
16 made by the responsible managers that will not be
17 added to the scope. Is that what "rejected" means in
18 this table?

19 C. KEIZER: Sorry. Have you changed topics now
20 to DRP? Is that --

21 T. EMINOWICZ: No. This is just a very well-
22 illustrated table that -- I am focusing on the
23 concepts that during outage execution, there are
24 outages that move around -- or sorry -- work orders
25 that move around. And so work orders could be
26 rejected, added, or removed from an outage. So I
27 just found the presentation very clear. This isn't
28 specific to refurbishment. This is still asking

1 about planned outages within normal operations at OPG
2 -- Darlington. Thank you for clarifying.

3 J. BLAZANIN: So maybe I will start, and then I
4 will turn it to my colleague, Ms. Carew, to talk
5 about outage planning in general, planned maintenance
6 outages.

7 This table refers specifically to the Darlington
8 refurbishment. And in the Darlington refurbishment,
9 we had a very specific change control Board to ensure
10 that we could manage the scope effectively. So in
11 this context in this chart, yes, there was 635
12 different work orders put forward in terms of
13 inclusion into the refurbishment scope. You can see
14 598 were added, 60 or 93 removed.

15 So it was a management of that scope to make
16 sure that the scope for Darlington refurbishment
17 doesn't get out of control. We had a very rigorous
18 process around that particular program, and that is
19 what you are looking at here.

20 In terms of outage planning, I can ask my
21 colleague, Ms. Carew, to comment on that.

22 K. CAREW: For outage planning, we follow
23 specific outage governance that is provided in
24 evidence for planning our outages, which includes
25 scope freeze timelines, both for major scope and then
26 overall as a whole for scope. That is overseen by
27 our scope review Boards, and then the final outage
28 schedule to be set.

1 Throughout the execution of an outage, there are
2 various reasons for which you may add scope.
3 Addition of scope could be due to discovery or due to
4 pieces of equipment failing or breaking; for example,
5 in the course of shutting down the reactor, a piece
6 of equipment expected to operate may not have
7 operated correctly, and we now have a corrective work
8 order to address.

9 Should that corrective work order require a
10 couple of things; one, the outage condition, so you
11 need to be in an outage to execute the work; and,
12 two, be required to be able to operate the reactor in
13 the future. Then it is definitely considered as part
14 of outage scope inclusion, and we utilize the scope
15 review Board process to inject that work into scope.
16 That is done very cautiously due to the risk that may
17 be associated with that, as that work is not well
18 planned yet and represents execution risks.

19 Additionally, there may be cause to remove scope
20 from an outage, and, again, that is also taken
21 carefully with the same scope control lens, primarily
22 because we actually would like to perform all the
23 work that is in the outage because it overall
24 improves plant reliability and is the opportunity to
25 perform that work during the outage.

26 Reasons that you may need to remove scope could
27 include things like we got into the work, and we
28 discovered something, and we really can't get that

1 part or certain discovery work such as that. And
2 then, of course, that is a real challenge should it
3 be one of the ones that you absolutely need to be
4 done, right.

5 So that is, in general, how it is done and, I
6 will say, a similar process to how it was done on
7 refurbishment, as that scope controlled during
8 execution of an outage is very important.

9 T. EMINOWICZ: Thank you. And, again, I am just
10 trying to understand the general concept. So just --
11 I understood how, you know, scope can be added, scope
12 work orders can be removed. I just wanted to confirm
13 that I heard correctly that there is also the
14 potential for discovery work that could be brought
15 forward for consideration, but then there is a reason
16 to not do that discovery work during this outage, and
17 it could be done later?

18 K. CAREW: If it is possible, that is certainly
19 part of the consideration, and obviously all work in
20 the nuclear power plant gets prioritized based on its
21 importance, which systems it is on, is it tied to
22 nuclear safety, and all of those considerations are
23 part of scope decisions.

24 T. EMINOWICZ: Thank you.

25 And so if -- if you start with the concept of an
26 outage that is in an OEB-approved forecast, and over
27 time, that outage changes in some way, is there -- is
28 it fair to -- for OPG to generalize whether those

1 kinds of scope changes proportionally happen more in
2 the planning phase before the outage starts or during
3 the execution? And what I mean by "changes to outage
4 scope," I mean in any way, positive or -- like,
5 additive or removing.

6 K. CAREW: I could not generalize.

7 T. EMINOWICZ: That is fair. Thank you.

8 Can we please turn to E2-Staff-156. Oh, sorry,
9 157. So both of these kind of deal with this primary
10 moisture separator replacement project. So I just
11 would like to confirm whether any 2027 planned outage
12 -- oh, sorry, I got mixed up. No, I don't need this
13 one. Sorry. I have a screenshot of an -- oh, this
14 is the SEC interrogatory that we were at. So this is
15 SEC-141, but now I have a question about -- the thing
16 to look at for the question is in Attachment 2 for
17 2027.

18 And so here we have a visual of the planned
19 outages in 2027 in this proceeding. And I would like
20 to ask for OPG to quantify the outage days in 2027
21 that could be attributed to work that was either -- I
22 guess trying to use the terms that I saw in that
23 Chart 1 -- like, rejected -- rejected from exclusion
24 due to discovery work or removed from previous
25 outages that were approved by EB-2020.

26 And I can say that again because I feel like I
27 kind of muddled my way through there.

28 K. CAREW: Were you going to repeat that?

1 T. EMINOWICZ: Yeah. I just wanted to give you
2 a moment to digest it.

3 So this -- what we are looking at is 512.7
4 outage days in 2027. And what I would like to know,
5 kind of I guess, added to this table, so at the
6 resolution of, you know, the Unit 2 planned outage,
7 the VBO, and this equipment risk outage, how many of
8 the days that are listed here can be attributed to
9 work that was deferred or rejected during an outage
10 that was approved in EB-2020-0290 and the terawatt
11 impact of those days?

12 K. CAREW: Could we pull up the interrogatory
13 for CCC-65? It is E2.

14 So in the response to "Alpha," it points out 15
15 days, and that is the only piece of work deferred.

16 T. EMINOWICZ: So during all the Unit 2 outages
17 that would have been in the EB-2020 proceeding, as
18 approved by the OEB, there was no work that was
19 deferred from any of those outages or would have been
20 discovery work in those outages and rejected from
21 those that turned into the Unit 2 2027 planned outage
22 and added outage days?

23 K. CAREW: So that is correct. This is the only
24 piece of work adding 15 days. Any other works that
25 were not executed, perhaps during an outage, will fit
26 within the normally scheduled outage for which this
27 2027 outage is one of those 36-month frequency
28 outages, and that outage is supporting -- will also

1 have the works for the primary moisture separator and
2 the TG controls upgrade for which there are no other
3 critical path impacts from any works in past outages.

4 T. EMINOWICZ: And so what about the inverse;
5 how many outage days in 2027 are, in OPG's
6 assessment, absolutely required in 2027 that could
7 not be deferred to, let's say, the next 36-month Unit
8 2 outage?

9 K. CAREW: So in the 2027 outage plan for
10 Darlington, there is no work that is a candidate for
11 being pushed out to the 2030 time frame.

12 T. EMINOWICZ: Thank you. That is all I have on
13 my topic, but my Spidey senses tell me someone wants
14 to follow-up.

15 **EXAMINATION BY M. BUONARGURO:**

16 M. BUONARGURO: Thank you. Michael Buonarguro
17 for CCC. This is on this very specific topic, so I
18 thought I would chime in.

19 When you were talking about this particular
20 deferral from 2025 to 2027, part of the deferral
21 included a 20-day post-work outage planned for 2026
22 in case you had to follow-up. Is that 20-day post-TG
23 work -- TG control work, does it appear in the 27 to
24 31 period? Or is it no longer necessary?

25 C. KEIZER: Sorry. Is that apparent on this
26 response, Mr. Buonarguro, the question that you are -
27 -

28 M. BUONARGURO: No.

1 C. KEIZER: And is there a reference that you
2 are...

3 M. BUONARGURO: Well, earlier, the Panel was
4 asked about a 20-day planned outage in 2026 and what
5 happened to it, and the answer was it was a follow-up
6 to the 2025 work that wasn't done, was pushed to
7 2027.

8 So my logic is if the 2025 outage was pushed to
9 2027, then presumably the 20-day outage in 2026 was
10 either moved to, presumably, 2028 or disappeared or
11 something. I am just trying to figure out what it
12 was, what is the answer.

13 K. CAREW: Yes. If you look at E2-SEC-141,
14 Attachment 2, and you look at the 2028 plans, you
15 will see no similar outage in 2028. And there is one
16 planned equipment risk outage, which is broadly for
17 the station for risks that may arise, not specific to
18 the turbine generator program.

19 M. BUONARGURO: Okay. It sounds like what was a
20 20-day planned outage in 2026 specific to -- the Unit
21 2, specific to this particular project, if needed,
22 has turned into a general 15-day planned outage, if
23 needed, for any of the units, presumably because at
24 that point, they are all post refurbishment.
25 Something like that?

26 K. CAREW: No. No, that is incorrect.

27 M. BUONARGURO: Okay.

28 K. CAREW: Equipment risk outage is in place not

1 -- it is not special to Unit 2. This one did not
2 turn into that. And it is part of our business
3 planning all the time.

4 M. BUONARGURO: Okay. Are there similar
5 equipment risk outages planned for the 2022 to 2027 -
6 - 2026 period?

7 K. CAREW: If you will refer to E2-SEC-141,
8 Attachment 1, which shows past outages, there you
9 will see something named "equipment aging outage."

10 M. BUONARGURO: Okay. Thank you.

11 T. EMINOWICZ: Thank you.

12 So my next area relates to the capital plan, and
13 it is a mix of kind of trying to understand a little
14 bit more about how particular work was deferred, but
15 then it kind of builds more into understanding a
16 specific capital project or, as it is defined in the
17 evidence, a program.

18 So if we could please start with D2-Staff-89 and
19 the response to part A, please.

20 So in the response to part A, at lines 20 to 22
21 -- there is going to be a lot of 20s -- it states
22 that this tritium removal facility major component
23 replacement program was identified at the time of the
24 EB-2020-0290 proceeding. And so I would like to
25 start by confirming that on this basis, there would
26 be revenue requirement impacts of this program that
27 were approved in the EB-2020 proceeding; is that
28 correct?

1 C. KEIZER: Maybe to put it in other language,
2 are you asking whether there were components of this
3 that went into service or forecasted to go into
4 service during that time?

5 T. EMINOWICZ: Yes. In EB-2020-0290, the OEB
6 approved revenue requirements, and I would like to --
7 it sounds to me like there were revenue requirement
8 impacts that were approved in that proceeding related
9 to this program. And where I am going with this is I
10 would like that amount that was approved in EB-2020-
11 0290 related to this program quantified and then
12 compared to the amounts in this proceeding.

13 J. BLAZANIN: I am afraid we can't answer that
14 question on the stand, so we will have to undertake
15 to provide a response.

16 T. EMINOWICZ: Thank you.

17 M. MILLAR: The undertaking is JT-2.22.

18 **UNDERTAKING JT-2.22: QUANTIFY THE REVENUE**
19 **REQUIREMENT AMOUNT THAT WAS APPROVED IN EB-2020-**
20 **0290 RELATED TO THE TRITIUM REMOVAL FACILITY**
21 **MAJOR COMPONENT REPLACEMENTS PROGRAM AND PROVIDE**
22 **A COMPARISON TO THE AMOUNTS IN THIS PROCEEDING**

23 T. EMINOWICZ: So if we could please go to --
24 actually, starting with the Question F as in
25 "Foxtrot," just so we can ground ourselves in what
26 was asked, where there is a request for some details
27 about the components and then the nature of the
28 project work, just stating there whether the

1 component replacements are lifecycle replacements or
2 end-of-life assets, failure-driven replacement, or
3 performance enhancement beyond original design
4 capability.

5 If we could go to the response, please, which
6 provides Chart 2, which is a list of projects that
7 identifies certain components.

8 So I would like to ask for this Chart 2 to be
9 updated with several new columns. First, to respond
10 to the question of identifying kind of the nature of
11 the work by replacement. And then due to kind of the
12 aforementioned section about this work being part of
13 a previous proceeding, I would like for this table to
14 also include the in-service additions for the -- for
15 each project and whether there is an amount in this,
16 I guess, 2027 to 2031 period or beyond, so if it is
17 in the scope of this proceeding or beyond this
18 proceeding.

19 And then also to identify which of these
20 projects are deferred from what was approved in EB-
21 2020-0290.

22 And then, finally, a confirmation or a summation
23 of the costs, to just understand that -- how much of
24 the projects in this table relate to the total sum of
25 the program. And if it is not 100 percent, then some
26 narrative to explain what is missing, please.

27 C. KEIZER: Can I have a moment, please.

28 Well, I think we will preface the undertaking

1 that to the extent that we can provide you the
2 information, we will provide you the information.
3 And if there is some reason we cannot, we will advise
4 why we cannot.

5 T. EMINOWICZ: Sure.

6 C. KEIZER: And I think the only other part of
7 the undertaking request, I think, that we have a bit
8 of a problem with is your reference to "and beyond."
9 I think we only want to deal with respect to the
10 issues in this rate period, not beyond this rate
11 period. But other than that and those caveats, we
12 can provide the undertaking.

13 T. EMINOWICZ: Yes. I mean, you are right. I
14 am more focused on this term, so "for beyond" is just
15 in totality what is missing. So just to be clear, I
16 would like to have the original undertaking responded
17 and then to understand the in-service amounts in this
18 proceeding and how much was moved from EB-2020 to
19 this proceeding and also just to understand what
20 proportion of the overall program is represented
21 here.

22 C. KEIZER: Yeah, understood.

23 M. MILLAR: The undertaking is JT-2.23.

24 T. EMINOWICZ: Okay. Thank you.

25 **UNDERTAKING JT-2.23: PROVIDE AN UPDATED CHART 2**
26 **FROM D2-STAFF-89 TO IDENTIFY, FOR EACH PROJECT,**
27 **THE NATURE OF THE COMPONENT REPLACEMENT WORK,**
28 **THE IN-SERVICE ADDITIONS WITHIN THE 2027 TO 2031**

1 PERIOD, WHICH PROJECTS WERE DEFERRED FROM EB-
2 2020-0290, AND THE PROPORTION OF THE OVERALL
3 PROGRAM REPRESENTED BY THE PROJECTS IN THE
4 TABLE. IF IT IS NOT 100 PERCENT, PROVIDE A
5 NARRATIVE TO EXPLAIN WHAT IS MISSING

6 T. EMINOWICZ: So I guess just to really
7 illustrate the trail of bread crumbs, in part G,
8 there is a reference to D2-AMPCO-52, Attachment 1.
9 And so that is where I would like to go next, please.
10 So I would just like to be able to see the
11 recommendation section there.

12 In the second paragraph, it says there:

13 "The final cost will be determined before
14 execution phase Gate 3A approval." [as read]

15 And I think it is on the next page where there
16 is kind of an enumeration of kind of the scopes.

17 Could OPG just confirm that this Gate 3A --
18 sorry, the next page -- the Gate 3A approval is
19 expected to happen in 2029 or something similar? Can
20 you confirm that, please.

21 P. LE DREFF: It is expected to occur prior to
22 2029.

23 T. EMINOWICZ: I am just trying to -- it says
24 that the final amount will be kind of known at Gate
25 3, and so I would just like to confirm it is correct
26 to infer that that will happen in 2029 or just before
27 2029. Generally.

28 P. LE DREFF: Before 2029.

1 T. EMINOWICZ: Thank you.

2 And so this business case summary is provided
3 through this interrogatory response because it is
4 updated from what is in the pre-filed evidence. And
5 so just before we kind of go to what is in the pre-
6 filed evidence, I just want to note, I guess for both
7 the transcript and the Panel, that this BCS appears
8 to start with 2027 work; is that correct? This
9 program is starting in 2027?

10 P. LE DREFF: The first major execution outage
11 where large scale work takes place is in the T2701
12 outage in 2027.

13 T. EMINOWICZ: Thank you.

14 And so the pre-filed version of this business
15 case summary is at Exhibit D2-1-3, Attachment 1, Tab
16 41.

17 And so in the recommendations section of this
18 version of the BCS, the first outage that is
19 identified is a 2026 outage, and I would just like to
20 ask OPG to please explain the nature of the deferral
21 from 2026 to 2027.

22 K. CAREW: So the outage reference in the
23 business case summary to occur in 2026 was moved to
24 2027 and is the same outage. We, as part of
25 operations in the last year of the tritium removal
26 facility, did have forced outages that required a
27 significant amount of corrective work. And once that
28 was completed, really find ourselves in a position

1 where we would like to operate the tritium removal
2 facility to have its essential services to upgrade
3 our heavy water. And so we are operating the tritium
4 removal facility in 2026 and preparing for this
5 outage in 2027.

6 T. EMINOWICZ: And so how come -- how come none
7 of this major component replacement work wasn't done
8 during those forced outages?

9 K. CAREW: There is a significant amount of work
10 to prepare for this refurbishment program of the
11 tritium removal facility and also the availability of
12 the parts, to have them available and procured. We
13 are not -- those parts and the readiness and the
14 planning was not ready in 2025.

15 And I will turn it over to Mr. Le Dreff for
16 further comment.

17 P. LE DREFF: I can add that the TRF-forced
18 outages that were taking place, the focus of those
19 was to get the asset back up and running, and if
20 project work had been inserted, that would have
21 significantly extended those forced outages.

22 T. EMINOWICZ: Is it correct to infer that the
23 EB-2020 proceeding would have approved amounts for
24 the 2026 planned outage?

25 J. BLAZANIN: This is not a generation outage,
26 so it would have been in terms of the planned scope
27 of work that we were planning. We were conferring
28 the original work that was in EB-2020 was early

1 initiation in definition phase work, so it would have
2 started the early planning and engineering back at
3 that time. And so it was in the very early inception
4 of this work program back in 2020.

5 T. EMINOWICZ: Thank you.

6 I would just like to kind of understand what
7 this facility does. So at least in my notes, I am
8 referencing this version of the BCS because it is not
9 about the particulars of the project but about the
10 facility. So I see on the next page -- I think it is
11 the next page -- there is a description of the
12 facility. Let's see. Maybe the next -- that -- yes,
13 that is the one.

14 And so in the -- in the middle -- second
15 paragraph there, kind of in the middle, there is a
16 sentence:

17 "Also the TRF, tritium removal facility, and the
18 heavy water management systems provide detritiation
19 services to external customers, including the CANDU
20 fleet and the province." [as read]

21 And so I just want to, I guess -- like, what --
22 this facility, it treats water; right? Like, it is a
23 water treatment kind of concept?

24 K. CAREW: The Darlington tritium removal
25 facility removes tritium from the heavy water
26 utilized in Ontario's CANDU stations.

27 T. EMINOWICZ: And is it -- it is only, I guess,
28 this tritiated heavy water that it deals with, yes?

1 K. CAREW: Correct.

2 T. EMINOWICZ: And does it deal with any water
3 outside of CANDU -- outside the context of CANDU
4 reactors?

5 K. CAREW: No.

6 T. EMINOWICZ: So then it would be correct to
7 infer that this -- this facility wouldn't do anything
8 for the small modular reactors, the DNNP facility,
9 once it is running?

10 K. CAREW: That is correct.

11 T. EMINOWICZ: And can you just describe, like,
12 where it is? Like, I assume it is on the Darlington
13 site, but, like, is it -- is it a separate building?
14 Is it part of the generating station building? In
15 general terms, tell me.

16 K. CAREW: The Darlington tritium removal
17 facility is located within the protected area of the
18 Darlington Nuclear Generating Station and is located
19 on the south side of the station in a separate
20 building.

21 T. EMINOWICZ: Thank you.

22 And so I am cognizant of the confidential
23 treatment of some information related to this
24 facility, so you could help me, course, correct if I
25 accidentally stray somewhere where I shouldn't. But
26 I would just like to understand in the most general
27 terms the external -- or I guess I will say it this
28 way -- the services that the tritium removal facility

1 provides. Does it provide the same services to OPG
2 nuclear facilities as it does to its external
3 customers?

4 K. CAREW: So to make sure that I don't
5 misspeak, could you pull up a reference so that I
6 could see if it is redacted before I answer?

7 T. EMINOWICZ: I mean, I am just looking at the
8 sentence that I quoted that it says it provides
9 services to external customers, and I am just
10 wondering, in the most general terms, whether there
11 are -- and it is, like, a "yes" or "no" -- like, are
12 there services that this facility provides to
13 Darlington that it does not provide to external
14 customers and in the inverse?

15 K. CAREW: So if we read that sentence in full,
16 it says:

17 "Also, the tritium removal facility and heavy
18 water management systems provide detritiation
19 services to external customers, including the CANDU
20 fleet in the province." [as read]

21 So that is detritiation services, which is the
22 same services I was speaking about. So what is your
23 question, then?

24 C. KEIZER: Are you asking whether the facility
25 does something other than detritiate --

26 T. EMINOWICZ: No. I am trying to understand if
27 this facility does something for Darlington that it
28 doesn't do for its external customers.

1 K. CAREW: The heavy water management facility
2 at Darlington also has an upgrade plant that does
3 upgrade services for the Darlington heavy water. As
4 all the other nuclear stations have their own heavy
5 water upgrade plants, they handle upgrading at their
6 own station.

7 T. EMINOWICZ: That sounds perfect. Thank you.
8 And so just to confirm, this program is covering
9 both of those two things?

10 K. CAREW: Incorrect.

11 T. EMINOWICZ: Okay.

12 K. CAREW: The tritium removal facility and the
13 scope of the projects there are only for the tritium
14 removal facility.

15 T. EMINOWICZ: Thank you. I think that helps.

16 Okay. Before we kind of warp our way to the
17 next reference, I just would like to ask to see one
18 of the headers of this business case summary so
19 together we can note and confirm the project number.

20 C. KEIZER: Can I just do a time check, Mr.
21 Millar, just to be --

22 M. MILLAR: We are past the time for the day,
23 Mr. Eminowicz. Do you have much more to go?

24 T. EMINOWICZ: No. I am kind of on a tail end,
25 and this is -- I will be done after I am done asking
26 these questions.

27 C. KEIZER: And so do we know -- do you have a
28 sense of how long that will be?

1 T. EMINOWICZ: Less than ten minutes.

2 M. MILLAR: Okay. Let's try to finish this up.

3 C. KEIZER: Yeah, that is fine.

4 T. EMINOWICZ: So can we please just go to,
5 like, a header of this business case summary to
6 confirm the project number is 84764. I am just -- I
7 am about to point it out somewhere else in the
8 evidence, so I just want to confirm we -- I am tired.
9 I just want to confirm we are looking at the same
10 number. Okay. Thank you.

11 So can we please go to Exhibit D2-1-3,
12 Attachment 1. So this is the same attachment. It is
13 just Tab 23, which is the business case summary for a
14 Darlington 4 kV motor project. And I would like to
15 look at page 3 of this business case summary, please.

16 And so in the middle of the page, in the fourth
17 paragraph there, there is a description of the scope,
18 some narrative about 130 pump motors, some more
19 numbers, and then the statement -- and I will be sure
20 that we kind of look at this together. It is an "or"
21 statement. It says:

22 "Or will be executed by the TRF aging management
23 CRS replacement project 16-84764." [as read]

24 Can you please confirm that the project number I
25 just said is the same TRF project that we talked
26 about, or does this, like, 16 somehow make this a
27 different project?

28 P. LE DREFF: That looks to be an error. The

1 TRF aging management CRS, which is a cryogenic
2 refrigeration system replacement project, is noted in
3 Exhibit D2, Tab 1, Schedule 3, page 9, under Project
4 87191, which is a separate project.

5 T. EMINOWICZ: Thank you. We don't need to go
6 there. I just was confused that the major component
7 replacement program project number was here, and I
8 was going to ask a follow-up. But since you
9 confirmed that is a typo, I don't need anything else.
10 Those are all my questions. Thank you.

11 M. MILLAR: Okay.

12 Thank you, everyone. We will return tomorrow
13 with -- beginning with CCC --

14 S. WALKER: Millar?

15 M. MILLAR: Yes.

16 S. WALKER: I am so sorry. I wanted to be
17 respectful of Mr. Keizer's "talk to me about it after
18 the break." I didn't get my hand up quick enough. I
19 am happy to defer my question until the morning. It
20 is in relation to the attachment that I reviewed.

21 C. KEIZER: Thank you, Mr. Walker. I appreciate
22 it.

23 M. MILLAR: Okay. Thanks, everyone. We will
24 see you bright and early at 9:30 tomorrow morning
25 where we will start with Mr. Buonarguro.

26 --- Whereupon the proceeding adjourned at 4:30
27 p.m. to resume Friday, May 29, 2026, at 9:30
28 a.m.