



**Public Hearing**

**Audience publique**

**Commissioner / Commissaire**

The Honourable / L'honorable  
C. William Hourigan

**VOLUME 10**

**Held at :**

Ian Scott Building  
100 Thomas More Private  
Second Floor Courtroom  
Ottawa, Ontario  
K1N 1E3

Friday, June 24, 2022

**Tenue à:**

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Salle de cours au 2<sup>e</sup> étage  
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K1N 1E3

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## **II**

### **Appearances / Comparutions**

Falguni Debnath	Executive Director / Directrice Générale
Christine Mainville	Co-lead Counsel / Avocate principale
Kate McGrann	Co-lead Counsel / Avocate principale
John Adair	Co-lead Counsel / Avocat principal
Chris Grisdale	Commission Counsel / Avocat de la Commission
Mark Coombes	Commission Counsel / Avocat de la Commission
Anthony Imbesi	Commission Counsel / Avocat de la Commission
Fraser Harland	Commission Counsel / Avocat de la Commission
Liz McLellan	Commission Counsel / Avocate de la Commission
Carly Peddle	Commission Counsel / Avocate de la Commission
Emily Young	Commission Counsel / Avocate de la Commission

Peter Wardle	The City of Ottawa
Betsy Segal	
Catherine Gleason-Mercier	
Jesse Gardner	

John McLuckie	Amalgamated Transit Union 279
Jaime Lefebvre	

Michael Valo	Alstom Transport Canada Inc.
Charles Powell	
Lena Wang	
Jacob McClelland	

Sarit Batner	Ontario Infrastructure and Lands Corporation (IO)
Julie Parla	
Morgan Watkins	
Solomon McKenzie	

### **III Appearances / Comparutions**

Kyle Lambert  
Jeremiah Kopp

Morrison Hershfield

Heather MacKay  
Jeffrey Claydon  
Adam Mortimer

The Province of Ontario

Michael Varantsidis  
Gary Gibbs  
Kim Gillham

Rideau Transit Group – EJV (Engineering Joint Venture)

Jennifer McAleer  
Peter Mantas  
Maria Braker

Thales Canada Inc.

David Jeanes

Transport Action Canada

Linda Rothstein  
Gordon Capern  
Michael Fenrick  
Jean-Claude Killey  
Kartiga Thavaraj  
Jesse Wright  
Mannu Chowdhury

RTG (Rideau Transit Group General Partnership)

+

OLRTC (Ottawa Light Rail Transit Group General  
Partnership)

+

RTM (Rideau Transit Maintenance General Partnership)

Michael O'Brien  
James Doris

STV

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Ottawa, Ontario

--- Upon commencing on Friday, June 24, 2022, at 9:00 a.m.

**THE REGISTRAR:** Order. All rise. The hearing is now resumed.  
The Honourable Justice Hourigan is presiding.

**COMMISSIONER HOURIGAN:** Good morning. Welcome to Day 10 of the hearings. Today's first witness is Matthew Slade of OLRTC/RTM. Mr. Slade, are you there?

**MR. MATTHEW SLADE:** Yes, I am.

**COMMISSIONER HOURIGAN:** Okay.

**MR. MATTHEW SLADE:** Good morning.

**COMMISSIONER HOURIGAN:** Good morning. You're going to be asked some questions today by counsel. Before we do that, though, we need to either have you swear an oath to tell the truth or affirm solemnly to tell the truth. What is your preference?

**MR. MATTHEW SLADE:** Affirm, please.

**COMMISSIONER HOURIGAN:** All right. Hang on.

**--- MR. MATTHEW SLADE: Affirmed**

**THE REGISTRAR:** The witness has been sworn in.

**COMMISSIONER HOURIGAN:** All right. Thank you. Mr. Slade, the first lawyer to examine you will be from the Commission, Ms. Mainville. Go ahead, Ms. Mainville.

**MS. CHRISTINE MAINVILLE:** Thank you, Mr. Commissioner.

**--- EXAMINATION IN-CHIEF BY MS. CHRISTINE MAINVILLE:**

**MS. CHRISTINE MAINVILLE:** Good morning, Mr. Slade.

**MR. MATTHEW SLADE:** Good morning.

**MS. CHRISTINE MAINVILLE:** Let's start with your employment currently is with EllisDon, correct?

**MR. MATTHEW SLADE:** Yes.

1                   **MS. CHRISTINE MAINVILLE:** And you are the rail director of  
2 systems and infrastructure there, looking after Ellis' -- all of EllisDon's transit projects in  
3 Canada, correct?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MS. CHRISTINE MAINVILLE:** Okay. And you held a few positions  
6 on the Ottawa LRT project beginning in late 2017, right?

7                   **MR. MATTHEW SLADE:** I joined the project formally in 2018, yes.

8                   **MS. CHRISTINE MAINVILLE:** 2018, yes, and I'll just enumerate  
9 the positions briefly, if you can then let me know if I've got it right? You first worked for  
10 OLRT Constructors ---

11                  **MR. MATTHEW SLADE:** Yes.

12                  **MS. CHRISTINE MAINVILLE:** --- correct? And you were involved,  
13 as you just pointed out, first informally to assist with revising the schedule to mitigate  
14 delay on the project, correct?

15                  **MR. MATTHEW SLADE:** Correct.

16                  **MS. CHRISTINE MAINVILLE:** And that was in 2017 before your --  
17 or beginning at the end of 2017 before your formal involvement in 2018?

18                  **MR. MATTHEW SLADE:** Yes. It was in the winter of 2017, right at  
19 the end of the year.

20                  **MS. CHRISTINE MAINVILLE:** Okay. And am I right that you  
21 became formally involved in April 2018 as assistant director and systems director for  
22 OLRTC?

23                  **MR. MATTHEW SLADE:** Yes.

24                  **MS. CHRISTINE MAINVILLE:** And you then became project  
25 director replacing Rupert Holloway when he left in July 2019?

26                  **MR. MATTHEW SLADE:** Yes.

27                  **MS. CHRISTINE MAINVILLE:** Okay. And then you led the project,  
28 then, for OLRTC through RSA and revenue service, correct?



1 **MR. MATTHEW SLADE:** Yes.

2 **MS. CHRISTINE MAINVILLE:** And you were also chair of the trial  
3 running team during that time period?

4 **MR. MATTHEW SLADE:** Yes.

5 **MS. CHRISTINE MAINVILLE:** Okay. And later in 2020, so about a  
6 year after revenue service when RTG was asked to prepare a remediation plan, you  
7 became an advisor to RTM?

8 **MR. MATTHEW SLADE:** Yes.

9 **MS. CHRISTINE MAINVILLE:** And, currently, you are an alternate  
10 board member for RTM, Rideau Transit Maintenance, right?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** Okay. And in terms of your  
13 background, you're not an engineer, but you are trained as a building surveyor in the  
14 U.K., which you've explained is close to engineering?

15 **MR. MATTHEW SLADE:** It is.

16 **MS. CHRISTINE MAINVILLE:** Okay. And you've worked all of  
17 your career in transit, including significant work in the railway industry, right?

18 **MR. MATTHEW SLADE:** Correct. All my work has been in the  
19 transit industry.

20 **MS. CHRISTINE MAINVILLE:** Okay. And you've previously  
21 worked for Alstom?

22 **MR. MATTHEW SLADE:** I have.

23 **MS. CHRISTINE MAINVILLE:** Okay. Now, going to your first role  
24 on the project, it was, am I right, to rework the schedule after the May 2018 RSA date  
25 was missed?

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. CHRISTINE MAINVILLE:** Okay. And am I right that your  
28 instructions were effectively to determine the earliest possible completion date?

1                   **MR. MATTHEW SLADE:** Yes.

2                   **MS. CHRISTINE MAINVILLE:** And so, what you do as a first step  
3 is you proceed to what -- and correct me if I'm wrong, but what may be the usual or  
4 regular analysis that you would conduct using sophisticated scheduling tools available  
5 to you, right?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MS. CHRISTINE MAINVILLE:** And that analysis gets you  
8 somewhere around a 90 per cent probability of meeting, as you recalled it when you  
9 were interviewed, a March 2019 RSA date. Do you recall that?

10                  **MR. MATTHEW SLADE:** I do.

11                  **MS. CHRISTINE MAINVILLE:** Okay. So, is that right, that you first  
12 performed this analysis, and the probability it gives you is a March 2019 RSA date?

13                  **MR. MATTHEW SLADE:** Yes.

14                  **MS. CHRISTINE MAINVILLE:** Okay. And then you, from there,  
15 looked at mitigation measures and ways to accelerate the schedule, right?

16                  **MR. MATTHEW SLADE:** Correct.

17                  **MS. CHRISTINE MAINVILLE:** Okay. And one aspect of that is  
18 that you're not including the contingency and risk that you would normally include?

19                  **MR. MATTHEW SLADE:** Correct.

20                  **MS. CHRISTINE MAINVILLE:** And am I right that in sort of  
21 accelerating the schedule, if you will, that also allows you to maintain a certain amount  
22 of pressure on everyone who is working on the project to get things done?

23                  **MR. MATTHEW SLADE:** Yes.

24                  **MS. CHRISTINE MAINVILLE:** Okay. And do you recall where you  
25 land after your incorporation of these mitigation measures and removing the  
26 contingency, where you land in terms of the proposed RSA date that you put forward?

27                  **MR. MATTHEW SLADE:** Originally, it was an October date. I can't  
28 remember the exact date in October, but it was an October 2018 date.

1                   **MS. CHRISTINE MAINVILLE:** October 2018. And do you recall  
2 whether it was you or someone else who came up with an August 2018 date?

3                   **MR. MATTHEW SLADE:** I mean, we -- I can't recall. When we run  
4 those probability models on the schedules, it -- obviously, the earlier the date is, the  
5 lower the probability is of achieving it, but the probability may have had an August date  
6 in it, but the percentage would have been low.

7                   **MS. CHRISTINE MAINVILLE:** Okay. And, ultimately, though, your  
8 recollection, I believe, was that the Board, the OLRTC Board or executive committee  
9 made a decision about the date that would be targeted, right?

10                  **MR. MATTHEW SLADE:** Yes.

11                  **MS. CHRISTINE MAINVILLE:** And was that October 2018, to your  
12 recollection?

13                  **MR. MATTHEW SLADE:** I believe so.

14                  **MS. CHRISTINE MAINVILLE:** Okay. And you've explained that  
15 subsequent to that, the City was brought into the conversation about the schedule,  
16 right?

17                  **MR. MATTHEW SLADE:** Correct.

18                  **MS. CHRISTINE MAINVILLE:** And you had indicated in your  
19 interview with Commission that the risks were -- the schedule risks were identified for  
20 the City and the critical path was laid out for them?

21                  **MR. MATTHEW SLADE:** Yes.

22                  **MS. CHRISTINE MAINVILLE:** Now, were you involved or present  
23 for these discussions?

24                  **MR. MATTHEW SLADE:** Yes.

25                  **MS. CHRISTINE MAINVILLE:** Okay. And so, who would those  
26 have been with at that time about the schedule and what the target date was to be  
27 following the missed May 2018 RSA date?

28                  **MR. MATTHEW SLADE:** I obviously can't remember everybody

1 that was in the room, but the most senior person I suspect was John Manconi and  
2 Steve Cripps. I can't remember if John was in the room, but Steve Cripps certainly was,  
3 and we had a lot of conversations, not just -- you know, in the buildup of that meeting  
4 with Mr. Cripps.

5 **MS. CHRISTINE MAINVILLE:** Okay. And would they have known  
6 about the probability analysis ---

7 **MR. MATTHEW SLADE:** Yes.

8 **MS. CHRISTINE MAINVILLE:** --- and the various probabilities?  
9 Yes? And so, they knew this proposed schedule was without or with little contingency?

10 **MR. MATTHEW SLADE:** Yes.

11 **MS. CHRISTINE MAINVILLE:** Okay. And OLRTC had proposed,  
12 as you said, an October date; do you recall that the City wanted -- or asked for a  
13 November date instead, November 2<sup>nd</sup>?

14 **MR. MATTHEW SLADE:** Correct.

15 **MS. CHRISTINE MAINVILLE:** Do you know why?

16 **MR. MATTHEW SLADE:** Their assertion was that we wouldn't  
17 achieve the October date.

18 **MS. CHRISTINE MAINVILLE:** But they believed the November  
19 date was realistic?

20 **MR. MATTHEW SLADE:** Correct.

21 **MS. CHRISTINE MAINVILLE:** Am I right that, as you previously  
22 informed the Commission, you did not believe even the November date to be realistic;  
23 correct?

24 **MR. MATTHEW SLADE:** It was probably unrealistic, yes.

25 **MS. CHRISTINE MAINVILLE:** Okay. The way you described it in  
26 your interview, if you recall, was that it could be achieved in a utopian world?

27 **MR. MATTHEW SLADE:** Correct.

28 **MS. CHRISTINE MAINVILLE:** Right.

1                   **MR. MATTHEW SLADE:** All the stars would have to align.

2                   **MS. CHRISTINE MAINVILLE:** Right. All the starts would have to  
3 align which rarely happens on a project like this; correct?

4                   **MR. MATTHEW SLADE:** Correct.

5                   **MS. CHRISTINE MAINVILLE:** And so my question is why would  
6 the October 2018 date be put forward if it was unrealistic really?

7                   **MR. MATTHEW SLADE:** That was a desire from all parties to  
8 oversee – get the project to the end date as quickly as possible.

9                   **MS. CHRISTINE MAINVILLE:** Okay. And you indicated the City  
10 was aware that this was a stretch target?

11                  **MR. MATTHEW SLADE:** Yes.

12                  **MS. CHRISTINE MAINVILLE:** Okay.

13                  **MR. MATTHEW SLADE:** At the time we were projecting, you  
14 know, over a year in advance as to what was going to happen and schedules are  
15 reviewed on a monthly basis for that very reason, because, you know, what you know  
16 now and what you know in a year's time is very, very different.

17                  **MS. CHRISTINE MAINVILLE:** Okay. And if the dates that – and  
18 the schedule that OLRTC was putting forward was not realistically achievable and  
19 OLRTC was still producing the schedule, was there not a concern that that may impact  
20 the relationship of trust between the parties, between OLRTC, RTG and the City?

21                  **MR. MATTHEW SLADE:** No, because the City were involved; at  
22 the time I didn't see trust or distrust being an issue at the time.

23                  **MS. CHRISTINE MAINVILLE:** Okay. And the result of the  
24 scheduling work, aside from not having any contingency, is that both the construction  
25 work and the testing and commissioning work becomes out of sequence; correct?

26                  **MR. MATTHEW SLADE:** Sorry, I'm not sure I'm understanding.

27                  **MS. CHRISTINE MAINVILLE:** But when you – I'm going back to  
28 when you were preparing the schedule.

1                   **MR. MATTHEW SLADE:** Right.

2                   **MS. CHRISTINE MAINVILLE:** And one thing you did was remove  
3 the contingency that you would normally allow for?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MS. CHRISTINE MAINVILLE:** And am I right, that the other piece  
6 of it, or one other piece of it, is that you – the sequency of the work has to change; so  
7 both in respect to the construction, but also testing and commissioning?

8                   **MR. MATTHEW SLADE:** Yes.

9                   **MS. CHRISTINE MAINVILLE:** And a lot of things are happening  
10 at the same time effectively; correct?

11                  **MR. MATTHEW SLADE:** Correct.

12                  **MS. CHRISTINE MAINVILLE:** And another aspect of accelerating  
13 the schedule is that there is far less time provided for to run the trains ahead of RSA;  
14 correct?

15                  **MR. MATTHEW SLADE:** I wouldn't necessarily say that.

16                  **MS. CHRISTINE MAINVILLE:** We'll just look at one of the earlier  
17 schedules; if we could look at COW0523321. So this is, of course, before your time,  
18 because I want to look at what the schedule was earlier on. But if you see this as  
19 December 2016, and if we go – well, first of all, let's go down a little bit just to see that  
20 it's – the next page, or sorry, a bit further. We'll see just the top of the schedule. So this  
21 is OLRTC's master schedule...

22                  **--- EXHIBIT No 136:**

23                               COW0523321 – Mitigation Schedule – Sinkhole Event – 20  
24                               December 2016

25                  **MR. MATTHEW SLADE:** Yes.

26                  **MS. CHRISTINE MAINVILLE:** ...at that time. And if we go to  
27 page 94; it's a fairly lengthy document, right? Because there's a lot to schedule over  
28 the course of a project like this?

1                   **MR. MATTHEW SLADE:** Oh yes.

2                   **MS. CHRISTINE MAINVILLE:** Okay. And then if we go to page  
3 94 towards the bottom, here you have the trial running period and do you see there for  
4 pre-trial running on the phone-in line, what's originally provided for, at least at this time  
5 in 2016, is almost three months of pre-trial running; correct?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MS. CHRISTINE MAINVILLE:** And that was significantly  
8 compressed ultimately; right?

9                   **MR. MATTHEW SLADE:** I think – so I haven't seen this before,  
10 but I think the fact that this line item says "pre-trial running, full main line" and then I  
11 assume the other schedule you're going to show me is the one that will probably show  
12 pre-trial running being, you know, a number of days rather than a number of months. I  
13 don't necessarily – I can't confirm that the two activities are the same activity.

14                  **MS. CHRISTINE MAINVILLE:** Okay. How so?

15                  **MR. MATTHEW SLADE:** So this is, you know, the full main line  
16 and there was – we were operating – in the other schedule, we were operating on the  
17 full main line for probably more than three months. So it – I mean I can't, you know,  
18 agree with whether it's the same level of activity. This might be more than one activity  
19 rolled in together.

20                  **MS. CHRISTINE MAINVILLE:** Okay.

21                  **MR. MATTHEW SLADE:** You know, without reviewing every  
22 single line item given all the activity codes and understanding; I mean on the face value  
23 it looks like it, but I don't know that it necessarily is.

24                  **MS. CHRISTINE MAINVILLE:** Okay. But am I right that the trains  
25 were only running on the full main line I think closer to the summer of 2019?

26                  **MR. MATTHEW SLADE:** No, they were running on the full main  
27 line from late summer, early fall of 2018.

28                  **MS. CHRISTINE MAINVILLE:** Okay. So then – then am I right

1 that if – running more than one train at the same time on the full main line I think  
2 occurred more towards the summer of 2019?

3 **MR. MATTHEW SLADE:** No, I don't agree with that statement  
4 either.

5 **MS. CHRISTINE MAINVILLE:** That's not your recollection? Okay.

6 **MR. MATTHEW SLADE:** I think we were running multiple vehicles  
7 of single cars rather than a double – rather than a train. We were running more than  
8 ten, a dozen trains on the full alignment in the fall of 2018.

9 **MS. CHRISTINE MAINVILLE:** That's your recollection? Okay.

10 **MR. MATTHEW SLADE:** Yes.

11 **MS. CHRISTINE MAINVILLE:** Okay. And just so we have it, for  
12 trial running at this point in time, what's been allotted is just short of one month...

13 **MR. MATTHEW SLADE:** Yes.

14 **MS. CHRISTINE MAINVILLE:** ... to do that? Okay.

15 We can take this down, thank you. Did you have any concerns in  
16 terms of the schedule that you ultimately produced with some direction, I take it, from  
17 the Board and perhaps others, did you have concerns from the perspective of the  
18 reliability of the system that OLRTC would be producing at the end of the day, in terms  
19 of how the activities, the various activities were to be performed and the time allotted for  
20 these activities, the construction and manufacturing, but also the testing and  
21 commissioning in trial running?

22 **MR. MATTHEW SLADE:** No, I didn't have any concerns  
23 regarding reliability at that time.

24 **MS. CHRISTINE MAINVILLE:** Okay. And you believe it could be  
25 done and produce a reliable system based on the way these activities were sequenced  
26 and the time – even though they were accelerated as well?

27 **MR. MATTHEW SLADE:** Yes.

28 **MS. CHRISTINE MAINVILLE:** Now, once formally involved on the



1 project you began attending RAMPM meetings, "Rail Activation Management Program  
2 Meetings"?

3 **MR. MATTHEW SLADE:** Correct.

4 **MS. CHRISTINE MAINVILLE:** And that was with OC Transpo, the  
5 City and some of their consultants; right?

6 **MR. MATTHEW SLADE:** Yes.

7 **MS. CHRISTINE MAINVILLE:** In addition to RTG and RTM who  
8 had representatives there?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** And the meetings would cover – I  
11 think you explained everything from training, testing and commissioning, media, vehicle  
12 performance and maintenance; right?

13 **MR. MATTHEW SLADE:** Yes.

14 **MS. CHRISTINE MAINVILLE:** Okay. And those meetings  
15 increased in frequency over time; right? They were monthly and then they came to be  
16 weekly meetings?

17 **MR. MATTHEW SLADE:** Correct.

18 **MS. CHRISTINE MAINVILLE:** And Mr. Manconi and Michael  
19 Morgan, am I right, chaired the meetings?

20 **MR. MATTHEW SLADE:** Yes.

21 **MS. CHRISTINE MAINVILLE:** Alstom representatives also began  
22 attending at a point in time, correct?

23 **MR. MATTHEW SLADE:** Yes, towards the very end.

24 **MS. CHRISTINE MAINVILLE:** Okay. And you indicated in your  
25 interview with the Commission that there was a huge thirst for knowledge from the City,  
26 at least at that point in time?

27 **MR. MATTHEW SLADE:** Yes.

28 **MS. CHRISTINE MAINVILLE:** But you also described that the City

1 had a distinct lack of trust ---

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** --- for Project Co. Can you explain  
4 that?

5 **MR. MATTHEW SLADE:** I think it was -- I mean, when I said that,  
6 and, you know, thinking back to when I was -- sat in those meetings and in that room,  
7 the level of challenge in the questioning, just the feeling was that we were not being  
8 trusted with what we were saying and what we were doing.

9 **MS. CHRISTINE MAINVILLE:** Okay. Did you have any sense of  
10 where that came from, that lack of trust?

11 **MR. MATTHEW SLADE:** No, not really. No.

12 **MS. CHRISTINE MAINVILLE:** Okay. And am I right that, as  
13 you've described it, the City -- that when OLRTC or RTG would propose something,  
14 your perception was the City was defensive or didn't believe that these things were  
15 being proposed for the good of the project?

16 **MR. MATTHEW SLADE:** Yeah, there was, I would say, a high  
17 level of skepticism as to why OLRTC would be proposing anything other than for the  
18 benefit of themselves. It wasn't -- it didn't ever come across that it was being perceived  
19 as being best for the whole project, which is the approach that certainly I was taking at  
20 the time.

21 **MS. CHRISTINE MAINVILLE:** You mean you were proposing  
22 things for the good of the project?

23 **MR. MATTHEW SLADE:** Yeah. It wasn't for the benefit of the  
24 contractor, so we were in it together, as far as I was concerned, and the best thing to do  
25 was to have the best outcome for everyone, and if there were proposals or suggestions  
26 that could improve that, then they were to be -- you know, that was the environment to  
27 table them at, but they were rarely, if ever, received with good reception.

28 **MS. CHRISTINE MAINVILLE:** Okay. And was one of these

1 proposals a soft or progressive opening?

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** And so, this was -- this possibility or  
4 option was raised with the City?

5 **MR. MATTHEW SLADE:** Yes.

6 **MS. CHRISTINE MAINVILLE:** And when was that? Do you recall?

7 **MR. MATTHEW SLADE:** So, I'm aware that there was one done at  
8 the -- sort of at the end of 2018, but I raised it again in late spring, early summer of  
9 2019, and that's the one that was -- it was my proposal that I brought. I never got an  
10 opportunity to actually make the proposal, because it was shut down so vehemently in  
11 the room.

12 **MS. CHRISTINE MAINVILLE:** Okay. So, let's just start with the  
13 first time. Were you present for that one? You said around the end of 2018?

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** And who was that discussed with, if  
16 you recall?

17 **MR. MATTHEW SLADE:** Everybody that was in the RAMP room  
18 at the time. So, John Manconi, Michael Morgan, the City's advisors from STV, Peter  
19 Lauch from RTG, Claude Jacob from RTM, and a whole host of other staff from the City  
20 teams, either from OC Transpo or from City of Ottawa.

21 **MS. CHRISTINE MAINVILLE:** So, was this a suggestion  
22 emanating from OLRTC?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** Okay. And what kind of progressive  
25 or soft opening was being proposed at that time?

26 **MR. MATTHEW SLADE:** So, at that stage, we were suggesting  
27 that it might be of benefit to all parties if we had what we -- I would classify it as a partial  
28 opening rather than a soft opening. We had essentially a large part of the east end of

1 the alignment at a level of maturity of testing commissioning so that if there had been an  
2 appetite to do it, we could have potentially opened, I suspect, between Blair and  
3 University of Ottawa, and run a shortened part of the railway that would give, you know,  
4 every party involved, RTM, the City, OC Transpo and the public, an opportunity to start  
5 using the system, albeit a reduced system, which would obviously provide benefits to --  
6 what we perceived at the time, benefits to all parties, but it was not seen in that regard  
7 from the City.

8 **MS. CHRISTINE MAINVILLE:** So, it was shut down, effectively, at  
9 that point?

10 **MR. MATTHEW SLADE:** Yes.

11 **MS. CHRISTINE MAINVILLE:** And was that partial opening raised  
12 primarily because of the issues resulting from the sinkhole and the alignment not -- or  
13 being delayed, the entire alignment being delayed?

14 **MR. MATTHEW SLADE:** Correct.

15 **MS. CHRISTINE MAINVILLE:** But you, as you've just explained,  
16 saw additional benefits in terms of getting people started on -- getting accustomed to  
17 the line and the system?

18 **MR. MATTHEW SLADE:** Yes.

19 **MS. CHRISTINE MAINVILLE:** Okay. And then you referenced  
20 another occasion when a partial or progressive opening was raised in the spring of  
21 2019?

22 **MR. MATTHEW SLADE:** Yes. So, that I would regard as -- what I  
23 was going to propose would have been what I would call a soft launch rather than a  
24 partial opening. So, it would have been the entire alignment, and it would have been  
25 what we would call a reduced service, not necessarily reduce the number of trains, but  
26 reduce the hours of service.

27 So, I've opened a number of other railways elsewhere before I  
28 came to Canada, and I've always done a soft launch, even with very established

1 agencies such as London Underground, where we would have a soft opening, and we  
2 would operate still a time tabled service, but we would start later than 4:00 a.m. You  
3 know, we would start -- if a normal day would start at 4:00 a.m., we would start at, say,  
4 8:00 a.m., and miss a portion of the morning peak, and we would close -- instead of  
5 running all the way up to midnight or 1:00 a.m., we could close at, say, 9:00 p.m. or 8:00  
6 p.m., such that the system gets used but by a reduced ridership, so relieving a bit of  
7 pressure, but it would also increase the time for OLRTC and RTM to undertake the  
8 closure of deficiencies and to ensure all of the infrastructure and the vehicles were  
9 having an increased period of maintenance because of the hours and the reduced  
10 hours of operation. So, that was what was the approach that I was hoping to be able to  
11 present to the RAMP room at the time.

12 **MS. CHRISTINE MAINVILLE:** So, you're the one who raised this  
13 personally at that time?

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** And who did you recommend that  
16 to?

17 **MR. MATTHEW SLADE:** Well, everybody that was in the room,  
18 but it was directed to John Manconi as the chair of the room.

19 **MS. CHRISTINE MAINVILLE:** Do you recall when you were  
20 interviewed, you weren't sure if it was during a RAMP meeting, you just recalled it being  
21 in the RAMP room?

22 **MR. MATTHEW SLADE:** Yes.

23 **MS. CHRISTINE MAINVILLE:** And so, would it have been to the  
24 entire team or just to Mr. Manconi?

25 **MR. MATTHEW SLADE:** It was certainly -- whether it was the --  
26 you're correct. I don't know whether it was a RAMP meeting. We had most of our  
27 meetings in that room, known as the RAMP room, which is in OC Transpo's offices.  
28 Certainly, there was a number of people in there. It wasn't just John and myself, but I

1 can't remember precisely if it was a RAMP meeting or not.

2 **MS. CHRISTINE MAINVILLE:** Okay. And so, what was the  
3 response that was received to this proposal?

4 **MR. MATTHEW SLADE:** Oh, it was another flat refusal, and, in  
5 fact, we didn't even really get an opportunity to even air the level of detail that I just  
6 presented to you just there. It was -- you know, we've -- you've raised this before, and it  
7 was rejected then, and it was just shut down firmly. It wasn't even -- I wasn't given five  
8 minutes of the floor to have a conversation. And it wasn't that I had a -- you know, had  
9 it all mapped out or had a formal proposal. I was expecting at that time for an  
10 opportunity to go away and work with some of the individuals from OC Transpo and  
11 from the City's consultants to flesh it out, to see whether or not it would have benefit or  
12 would be of something of interest.

13 **MS. CHRISTINE MAINVILLE:** Okay. But you were not -- sorry?

14 **MR. MATTHEW SLADE:** But it never got to that stage.

15 **MS. CHRISTINE MAINVILLE:** Right. You were not asked for  
16 details or a plan?

17 **MR. MATTHEW SLADE:** No.

18 **MS. CHRISTINE MAINVILLE:** And you had described the  
19 response as being so badly received that it wasn't raised again?

20 **MR. MATTHEW SLADE:** Correct.

21 **MS. CHRISTINE MAINVILLE:** And am I right that your impression  
22 was that -- the impression was as though Project Co. was trying to take advantage or  
23 were going to benefit in some way from this? Yes?

24 **MR. MATTHEW SLADE:** Yes.

25 **MS. CHRISTINE MAINVILLE:** And you recalled at least one of the  
26 City's advisors being supportive of the idea?

27 **MR. MATTHEW SLADE:** Yes, Tom Prendergast from STV.

28 **MS. CHRISTINE MAINVILLE:** Okay. And what do you recall him

1     stating at that time?

2                   **MR. MATTHEW SLADE:** That he -- I think at the time, he was  
3     trying to agree that it was something we should discuss, and he was supportive that a  
4     soft launch would be a wise thing to do. But, again, it never got any further than that.

5                   **MS. CHRISTINE MAINVILLE:** Okay. And am I right that your view  
6     is that even if you have sufficient time to run the vehicles and fully burn in the system  
7     ahead of revenue service, you would still recommend or advise for a soft start because  
8     -- well, perhaps you can explain that. Am I right that that's your view?

9                   **MR. MATTHEW SLADE:** Yes. I would never contemplate opening  
10    a rail system without a soft opening.

11                  **MS. CHRISTINE MAINVILLE:** And why is that?

12                  **MR. MATTHEW SLADE:** Just because there are so many moving  
13    parts and so many unknowns and, you know, you can test and test, but until the system  
14    is actually being used, you don't know how it's going to behave or react or respond.  
15    And as I know, others have probably talked about it, and there's -- it's a phrase that I  
16    know people -- in this day and age, we shouldn't use. There is quite often early failures,  
17    what we refer to as infant mortality, on certain systems. It's quite common on electronic  
18    components of all sorts, not just railways, and the best thing to do is to have a soft  
19    launch.

20                   I think it's -- I mean, for me, it's built -- I've built it into everything  
21    I've done, because ever since I've worked in the industry, all the jobs I've worked on,  
22    there's been something that's been incorporated into it. So, for me, it's -- I regard it as  
23    best practice.

24                  **MS. CHRISTINE MAINVILLE:** Okay. And am I right that here,  
25    there was neither a soft start or a progressive opening, nor really sufficient time to fully  
26    burn in the system prior to it being launched?

27                  **MR. MATTHEW SLADE:** So, I'd like to -- sorry, "burn." So, a lot of  
28    these terms have very specific meanings, and maybe different meanings to different

1 people. So, when we talked about "burn in," we talk -- that's specifically about vehicles  
2 and about the number of kilometres that they cover before going into service. This  
3 particular contract did not have a burn in requirement, but we would have -- well, we did.  
4 We far exceeded what would be I would regard as a normal burning with the number of  
5 kilometres on these vehicles.

6 So, yeah, burn in and soft opening, two very different, distinctive  
7 things. Same as some of the other terms that we use. Bedding in period is more akin  
8 to reliability growth period.

9 **MS. CHRISTINE MAINVILLE:** Right.

10 **MR. MATTHEW SLADE:** And that, again, is separate from a soft  
11 launch.

12 **MS. CHRISTINE MAINVILLE:** And so -- right. And so, perhaps  
13 what I should have said is there was no -- not a full bedding in period before the launch.

14 **MR. MATTHEW SLADE:** There was an opportunity for one, but it  
15 wasn't taken.

16 **MS. CHRISTINE MAINVILLE:** What do you mean an opportunity  
17 for one?

18 **MR. MATTHEW SLADE:** So, the contract with -- for the delivery of  
19 the project, as you're aware, had a revenue service availability date, and the date of  
20 revenue service was completely in the gift of the City, and, therefore, you could have  
21 had any time frame between revenue service availability and revenue service  
22 commencing. So, that period, whatever that period was, would be your bedding in or  
23 your reliability growth period.

24 **MS. CHRISTINE MAINVILLE:** Okay. So, between RSA and the  
25 actual launch of the service to the public is when ---

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. CHRISTINE MAINVILLE:** --- you would have foreseen some  
28 bedding in period to be ---



1 **MR. MATTHEW SLADE:** Yes.

2 **MS. CHRISTINE MAINVILLE:** Okay. Now, you've spoken about  
3 the pressure to get to RSA on all sides, really, that basically everyone had the same  
4 goal?

5 **MR. MATTHEW SLADE:** Yes.

6 **MS. CHRISTINE MAINVILLE:** And so, let's start with the pressure  
7 from your own organization. You've described, first, the financial pressure on OLRTC at  
8 the time as being significant?

9 **MR. MATTHEW SLADE:** Yes, it was.

10 **MS. CHRISTINE MAINVILLE:** Do you recall there were a lot of --  
11 what I think have been called cash calls to the partners to bring the project to  
12 completion?

13 **MR. MATTHEW SLADE:** Yes, there were.

14 **MS. CHRISTINE MAINVILLE:** Okay. And then there were  
15 liquidated damages and penalties being incurred for the delay?

16 **MR. MATTHEW SLADE:** Yes, every day.

17 **MS. CHRISTINE MAINVILLE:** Right. And you've mentioned that  
18 you had pressure from your Board to achieve milestones because there were financial  
19 payments linked to them.

20 **MR. MATTHEW SLADE:** Yes.

21 **MS. CHRISTINE MAINVILLE:** I just want to clarify. Is that only in  
22 respect of substantial completion and RSA or other milestones as well?

23 **MR. MATTHEW SLADE:** Those were the only two milestones that  
24 I really felt any pressure from.

25 **MS. CHRISTINE MAINVILLE:** Okay. And you were not on the  
26 Board or at the executive level, but from where you stood, would this financial impact  
27 have been greater than what may have been anticipated or planned for?

28 **MR. MATTHEW SLADE:** Yes.

1 **MS. CHRISTINE MAINVILLE:** Yes?

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** How so and why is that?

4 **MR. MATTHEW SLADE:** Well, I think -- again, like, I wasn't there  
5 at the time. Obviously, we talked -- well, you mentioned the sinkhole, which was a  
6 significant event for everyone on the project and added a considerable amount of time  
7 to the schedule. Nobody could have foreseen that. And so, the financial pressures that  
8 came as a result of the delay were not foreseen either.

9 **MS. CHRISTINE MAINVILLE:** But is it not the case that complex  
10 projects like this one are often late?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** So -- but to your mind, this was out  
13 of the ordinary?

14 **MR. MATTHEW SLADE:** Yes. When -- I think when you refer to  
15 complex projects being late, that is true, and a number of projects I've worked on have  
16 been beyond their original planned date, but there is obviously mechanisms in contracts  
17 to provide what's called an "extension of time," and extension of time gives you relief  
18 and helps and assists with those penalties.

19 **MS. CHRISTINE MAINVILLE:** And so, in your experience, there's  
20 often that type of extension granted?

21 **MR. MATTHEW SLADE:** Yes.

22 **MS. CHRISTINE MAINVILLE:** Okay. And am I right there was not  
23 in this case, to your knowledge?

24 **MR. MATTHEW SLADE:** Correct.

25 **MS. CHRISTINE MAINVILLE:** In terms of the pressure on the City  
26 side to get to RSA, how would you describe that?

27 **MR. MATTHEW SLADE:** I would describe it quite simply as very  
28 political.

1                   **MS. CHRISTINE MAINVILLE:** Okay. And what was your basis for  
2 that perception?

3                   **MR. MATTHEW SLADE:** I think the level of attention from the  
4 media and the politicians was quite immense, not something I had experienced before  
5 to this extent, and it was -- it was clear from meetings with councillors and the City staff  
6 that the pressure was far greater than I've seen on other projects, and that was driven  
7 predominantly by the City staff and the councillors and the various meetings that were --  
8 we were able to watch publicly, such as Transit Commission, and FEDCO, et cetera.

9                   **MS. CHRISTINE MAINVILLE:** Okay. Did you have any sense of  
10 what informed that pressure, that desire to get to RSA in a ---

11                  **MR. MATTHEW SLADE:** You know, I came to the project quite  
12 late, but it was clear from, you know, reading news articles, and reading media, and  
13 watching what was going on that several people had been very vocal about the delivery  
14 of the project and the schedule, and had made promises on it being, you know, finished  
15 and in service by a particular date. So, those pressures, I think, came from that.

16                  **MS. CHRISTINE MAINVILLE:** When you say certain people, are  
17 you referencing the Mayor's Office or otherwise?

18                  **MR. MATTHEW SLADE:** Yes. No, the Mayor's Office.

19                  **MS. CHRISTINE MAINVILLE:** The mayor specifically?

20                  **MR. MATTHEW SLADE:** Yes.

21                  **MS. CHRISTINE MAINVILLE:** Okay. And am I right to say,  
22 though, that this, from the City's perspective, was not at any cost, right? Because they  
23 initially refused OLRTC's first application for substantial completion?

24                  **MR. MATTHEW SLADE:** Yes.

25                  **MS. CHRISTINE MAINVILLE:** But as you describe it, in the  
26 summer of 2019, the pressure was very significant?

27                  **MR. MATTHEW SLADE:** Yes.

28                  **MS. CHRISTINE MAINVILLE:** Okay. And so as a result, am I

1 right, that it was understood by all that OLRTC was going to proceed to trial running as  
2 soon as substantial completion was met, even if the trains were not running reliably?

3 **MR. MATTHEW SLADE:** That was the plan. That was always the  
4 plan.

5 **MS. CHRISTINE MAINVILLE:** And that's because once you  
6 achieved substantial completion you could, at least on paper, start trial running; right?  
7 That was the next step.

8 **MR. MATTHEW SLADE:** Yes.

9 **MS. CHRISTINE MAINVILLE:** And trial running is – we've heard a  
10 bit about it, but it's operating the system to a timetable that replicates how the system  
11 would operate in revenue service; right, and making daily service but without  
12 passengers?

13 **MR. MATTHEW SLADE:** Yes.

14 **MS. CHRISTINE MAINVILLE:** And is it correct that the City made  
15 an announcement when substantial completion was certified?

16 **MR. MATTHEW SLADE:** They made an announcement, sorry?

17 **MS. CHRISTINE MAINVILLE:** That they announced substantial  
18 completion had been certified?

19 **MR. MATTHEW SLADE:** Yes.

20 **MS. CHRISTINE MAINVILLE:** You recall that? Okay.

21 And you said once that happened everyone got their calendar out  
22 and predicted when the railway was going to open?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** And so the decision to go straight  
25 to trial running is a decision that OLRTC makes; correct?

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. CHRISTINE MAINVILLE:** But it's fair to say the City was on  
28 board with that plan; right?

1                   **MR. MATTHEW SLADE:** Yes, I mean trial running involved a  
2 number of stake-holders and everybody had to be on board; I mean it was OLRTC's, I  
3 would say "request". It was in our schedule to almost immediately, but I guess with the  
4 trial running being – participated in by a number of parties, then we could have had a  
5 discussion and potentially delayed it, but there wasn't any appetite at that time to delay  
6 anything.

7                   **MS. CHRISTINE MAINVILLE:** Okay.

8                   **MR. MATTHEW SLADE:** And pre-trial running, as we've seen on  
9 this schedule, that's typically essentially practiced for trial running; right?

10                  **MR. MATTHEW SLADE:** Yes.

11                  **MS. CHRISTINE MAINVILLE:** But without any pass/fail criteria;  
12 you're just running the full system to make sure you're ready for trial running?

13                  **MR. MATTHEW SLADE:** Yes, it's the "mock exam" for want of a  
14 better phrase.

15                  **MS. CHRISTINE MAINVILLE:** And in this case it was a matter of  
16 a few days; might it have been a couple of days even?

17                  **MR. MATTHEW SLADE:** Correct.

18                  **MS. CHRISTINE MAINVILLE:** And so you – do you recall  
19 indicating during your interview that come the time for trial running, I think when I asked  
20 you if the trains were ready for trial running you indicated that on paper the trains were  
21 ready for trial running but their reliability was quite a way short of where you were  
22 hoping they would be at that point?

23                  **MR. MATTHEW SLADE:** Yes.

24                  **MS. CHRISTINE MAINVILLE:** And so what were the issues that –  
25 I mean I take it there were quite – the issues were varied across the different vehicle  
26 systems; correct, at that point in time?

27                  **MR. MATTHEW SLADE:** Yes.

28                  **MS. CHRISTINE MAINVILLE:** Do you recall some off the top of

1 your head?

2 **MR. MATTHEW SLADE:** We were having – I'll be general, we  
3 were having brake issues, door issues and auxiliary power supply issues.

4 **MS. CHRISTINE MAINVILLE:** Okay.

5 **MR. MATTHEW SLADE:** There was probably more though  
6 certainly.

7 **MS. CHRISTINE MAINVILLE:** Traction power issues?

8 **MR. MATTHEW SLADE:** Yeah.

9 **MS. CHRISTINE MAINVILLE:** And you, as we've mentioned,  
10 chaired the trial running review team; right?

11 **MR. MATTHEW SLADE:** I'll say, yes, yes.

12 **MS. CHRISTINE MAINVILLE:** Along with Will Allman?

13 **MR. MATTHEW SLADE:** Correct.

14 **MS. CHRISTINE MAINVILLE:** Who was also with OLRTC?

15 **MR. MATTHEW SLADE:** Yes.

16 **MS. CHRISTINE MAINVILLE:** And that's because trial running is  
17 effectively an OLRTC production; right? It's part of your obligation under the project  
18 agreement and the last time to RSA?

19 **MR. MATTHEW SLADE:** Yes.

20 **MS. CHRISTINE MAINVILLE:** And Mr. Allman had recently been  
21 brought in from SNC to help with the project close-out; right?

22 **MR. MATTHEW SLADE:** Yes.

23 **MS. CHRISTINE MAINVILLE:** And he was pretty new to the  
24 project and you recall indicating that that's precisely why you decided to bring him on to  
25 the trial running team?

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. CHRISTINE MAINVILLE:** And explain that reasoning?

28 **MR. MATTHEW SLADE:** I wanted to have someone who was in

1 the room and managing the process who was – I’m going to say, use the word,  
2 “divorced” from everything that had gone on before and was not party to the pressures  
3 and issues and everything else that had been happening and was not, I guess, involved  
4 in any of the relationships that were in the room, et cetera. He was – whilst he was an  
5 OLRT employee he was relatively independent in terms of everything that had been  
6 going on in the build-up to that, and I wanted someone to be able to be responsible for  
7 compiling the score sheets and everything else, being the secretary at the meeting for  
8 want of a better term. And making sure that if there were going to be any discussions or  
9 debates in the room, that there was someone, other than myself, that could steer the  
10 conversation such that it didn’t have the look or feel that I was trying to persuade  
11 anyone one way or the other, not that that was like a plan that was ever expected, but I  
12 just wanted, you know, someone else to have control or the secretary of the meeting  
13 role basically.

14 **MS. CHRISTINE MAINVILLE:** Someone who I think as you  
15 described it previously, didn’t have baggage with the City and with RTM?

16 **MR. MATTHEW SLADE:** Yes.

17 **MS. CHRISTINE MAINVILLE:** Was this to address the trust issue  
18 that you’ve described?

19 **MR. MATTHEW SLADE:** Partly, yes.

20 **MS. CHRISTINE MAINVILLE:** Okay.

21 **MR. MATTHEW SLADE:** And you began working on planning for  
22 trial running with the City consultant named Russell Davies; correct?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** And so that was about working on  
25 what the requirements for trial running would be?

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. CHRISTINE MAINVILLE:** You indicated in your interview that  
28 there were several versions of the trial running procedure before the one you wrote with

1 Will Allman?

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** But am I right that you, at that point  
4 in time when you start working on this trial running procedure, you're not aware, or you  
5 were not aware of a version of the requirements that was devised in 2017 and agreed to  
6 by all parties called the "RFI0266"?

7 **MR. MATTHEW SLADE:** I was not aware of that at the time.

8 **MS. CHRISTINE MAINVILLE:** Okay. Because that predated you?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** And so when you spoke in your  
11 interview of working off an original document that you said contained some errors and  
12 didn't achieve what it needed to, you were not referring to the RFI?

13 **MR. MATTHEW SLADE:** No.

14 **MS. CHRISTINE MAINVILLE:** Okay. So there was some earlier  
15 version of the – what ultimately became the trial running procedure that you came up  
16 with?

17 **MR. MATTHEW SLADE:** Yes.

18 **MS. CHRISTINE MAINVILLE:** And let's bring that up, the work  
19 product you – well, that flowed from your work with Mr. Davies but that you and Mr.  
20 Allman ultimately prepared; it's OTT0377178.

21 **COMMISSIONER HOURIGAN:** Please repeat the number.

22 **MS. CHRISTINE MAINVILLE:** Yes, sorry. OTT0377178.

23 **COMMISSIONER HOURIGAN:** Stand by.

24 **MS. CHRISTINE MAINVILLE:** I'm sorry, it could be 3177178.

25 Yeah, I think it's 3177178, OTT. Thank you.

26 This is the trial running test procedure you devised; correct, Mr.

27 Slade?

28 **MR. MATTHEW SLADE:** It looks like it, yes.



1                   **MS. CHRISTINE MAINVILLE:** And you see it says "Prepared by  
2 Matthew Slade and Will Allman"?

3                   **MR. MATTHEW SLADE:** Yes.

4                   **MS. CHRISTINE MAINVILLE:** And if we scroll down just a little bit  
5 we have the date of the document; this is the final Rev-2 dated July 31<sup>st</sup>, 2019; right?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MS. CHRISTINE MAINVILLE:** Which is just about the time trial  
8 running started?

9                   **MR. MATTHEW SLADE:** Yes.

10                  **MS. CHRISTINE MAINVILLE:** And if we go to page three, just at  
11 the bottom of the page, yes, where you have definitions. So this is the definition, am I  
12 right, from schedule 15.1 of the project agreement of what trial running is; correct?

13                  **MR. MATTHEW SLADE:** Correct.

14                  **MS. CHRISTINE MAINVILLE:** And it says:

15                         "A 12 consecutive day period that may commence upon the  
16 successful completion of testing and commissioning."

17 And it indicates:

18                         "Upon successful completion of trial running the integrated system  
19 will be ready for revenue service"?

20                         Right?

21                  **MR. MATTHEW SLADE:** Yes.

22                  **MS. CHRISTINE MAINVILLE:** So that's the starting point for what  
23 trial running is about.

24                  **MR. MATTHEW SLADE:** Yes.

25                  **MS. CHRISTINE MAINVILLE:** And then if we go to page 5, we  
26 have here the objectives to be achieved. And am I right that those are taken directly  
27 from Schedule 14 of the PA, project agreement?

28                  **MR. MATTHEW SLADE:** Yes.

1                   **MS. CHRISTINE MAINVILLE:** Yes? And we see, for instance, the  
2 second bullet point that the objective is, amongst others:

3                               “To exercise and confirm the operating reliability of  
4                               the system and subsystems.”

5                   **MR. MATTHEW SLADE:** Yes.

6                   **MS. CHRISTINE MAINVILLE:** Okay? And it indicates that:

7                               “(Note: The basic design requirements and safety  
8                               and security requirements will have been verified  
9                               through the testing and commissioning program prior  
10                              to this stage of Trial Running)”

11                   Right?

12                   **MR. MATTHEW SLADE:** Yes.

13                   **MS. CHRISTINE MAINVILLE:** And so safety and the functioning of  
14 the system, that’s covered during testing and commissioning in the various tests that  
15 are done there, but trial running is really to demonstrate reliability, that’s the point.

16                   **MR. MATTHEW SLADE:** So not just reliability, operability.

17                   **MS. CHRISTINE MAINVILLE:** Operability, okay. But part of it is  
18 confirming reliability?

19                   **MR. MATTHEW SLADE:** Yes.

20                   **MS. CHRISTINE MAINVILLE:** Okay. And then we have more  
21 about the scope of trial running that I won’t take you through, but if we go to page 7, and  
22 you see just beneath that chart, it indicates:

23                               “Over the course of the 12 day trial, achievement of  
24                               the following goals will be verified to the satisfaction of  
25                               the Independent Certifier...”

26                   And that’s taken directly from section 1.5(e) of Schedule 14?

27                   **MR. MATTHEW SLADE:** Yes.

28                   **MS. CHRISTINE MAINVILLE:** And then if we jump to page 9, we

1 have here at the bottom of the page, where it describes the trial running process, that  
2 the IC, so the independent certifier again, will provide -- oh, sorry; on my page it's at the  
3 bottom but here on yours it's at the top of page 10, I believe, if we go down. Yeah. So  
4 the number 4, subpoint 4:

5 "The IC will provide final classification for the previous  
6 day as one of the following:"

7 And then it explains, "Pass, Repeat, and Re-start".

8 **MR. MATTHEW SLADE:** Yes.

9 **MS. CHRISTINE MAINVILLE:** And so, for a pass, performance  
10 has to be demonstrated for all evaluation criteria.

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** And then we move on to the next  
13 day. A repeat is, you'll have the performance in one or more criteria not having been  
14 met, or not having the passing requirement, that'll be a repeat day.

15 **MR. MATTHEW SLADE:** Yes.

16 **MS. CHRISTINE MAINVILLE:** And a restart or a failure occurs  
17 when you have serious safety issues requiring restarting the trial running at Day 1.

18 **MR. MATTHEW SLADE:** Yes.

19 **MS. CHRISTINE MAINVILLE:** And so just pausing there, because  
20 there was a restart, you'll recall, at the start of trial running around Day 3?

21 **MR. MATTHEW SLADE:** Yes.

22 **MS. CHRISTINE MAINVILLE:** And so was that linked to a safety  
23 issue?

24 **MR. MATTHEW SLADE:** I don't believe so.

25 **MS. CHRISTINE MAINVILLE:** It doesn't indicate that there were  
26 any safety issues, but I take it, then, that the performance was just so poor that it was  
27 considered that you needed to restart?

28 **MR. MATTHEW SLADE:** Yes.

1                   **MS. CHRISTINE MAINVILLE:** Okay. And at number 7 here,  
2 subpoint 7, we have:

3                   “Should a situation arise when one or more of the  
4 eighteen pass criteria is not considered a pass, the  
5 Trial Running Review Team will assess the conditions  
6 that led to the fail and will make a determination. Any  
7 fails within a pass day will be justified and recorded  
8 on the scorecard and verified by the Independent  
9 Certifier.”

10                  And so am I right that this explains why -- and we'll come to some  
11 of the scorecards in a bit, that explains why you may have a failed criteria or a failure on  
12 some of the criteria, but overall the day will be a pass?

13                  **MR. MATTHEW SLADE:** Right.

14                  **MS. CHRISTINE MAINVILLE:** And so there is some level of  
15 discretion even if some of the, as it says here, 18 criteria are not met. Depending on  
16 what led to the failure, a note might be made to explain why the trial running review  
17 team might consider it to, nevertheless, not warrant a repeat day or a restart day?

18                  **MR. MATTHEW SLADE:** Correct.

19                  **MS. CHRISTINE MAINVILLE:** Okay. And then just at the very end  
20 of the subpoint number 8, it says:

21                  “The 12 ‘pass’ scorecards signed by the IC is the  
22 validation for Trial Running.”

23                  **MR. MATTHEW SLADE:** Yes.

24                  **MS. CHRISTINE MAINVILLE:** And so trial running could not be  
25 validated, am I right, by the IC unless there had -- unless there were 12 passes on the  
26 scorecards, 12 daily passes?

27                  **MR. MATTHEW SLADE:** Yes.

28                  **MS. CHRISTINE MAINVILLE:** Okay. And I just want to point out a

1 little bit lower in the category of "Exclusions," a little bit lower on the page. Thank you.

2 You have exclusions here, and this is from availability calculations,  
3 so the availability of the trains, right?

4 **MR. MATTHEW SLADE:** Yeah. It might not have been just the  
5 trains.

6 **MS. CHRISTINE MAINVILLE:** Okay. But one example it gives is  
7 where there's an event outside of OLRTC's control that reduces availability?

8 **MR. MATTHEW SLADE:** Yes.

9 **MS. CHRISTINE MAINVILLE:** And so, for instance, the first bullet  
10 is:

11 "Any 'Non Project Co. Cause' as defined in Schedule  
12 20 of the Project Agreement."

13 **MR. MATTHEW SLADE:** Yes.

14 **MS. CHRISTINE MAINVILLE:** And so that could be something just  
15 totally outside of your control, like a fire emergency or some other ---

16 **MR. MATTHEW SLADE:** Correct. If there'd been a road traffic  
17 accident or if -- a power outage like we had recently in Ottawa; if there'd been a hydro  
18 outage that prevented -- that shut the railway for a number of hours, then that would be  
19 a non-Project Co. cause.

20 **MS. CHRISTINE MAINVILLE:** That wouldn't cause -- that wouldn't  
21 count.

22 **MR. MATTHEW SLADE:** Correct.

23 **MS. CHRISTINE MAINVILLE:** Okay. And trial running was to be,  
24 as we've seen pursuant to the project agreement, 12 days in a row with a passing  
25 grade; correct?

26 **MR. MATTHEW SLADE:** Correct.

27 **MS. CHRISTINE MAINVILLE:** And such that it would take  
28 however long it took to get those 12 passing days, right?

1                   **MR. MATTHEW SLADE:** Yes. I mean, it could take 12 takes; it  
2 could take six months, or whatever, right?

3                   **MS. CHRISTINE MAINVILLE:** Right. And that was generally  
4 accepted, that that was the way it was to be interpreted? When I say, "That was the  
5 way," that amongst at least all of the trial running team but amongst the various entities  
6 involved; correct?

7                   **MR. MATTHEW SLADE:** Correct.

8                   **MS. CHRISTINE MAINVILLE:** And as you explained in your  
9 interview, am I right that you, in this trial running procedure, purposely had the metrics  
10 match the reliability targets that RTM would be held to following revenue service?

11                  **MR. MATTHEW SLADE:** Yes.

12                  **MS. CHRISTINE MAINVILLE:** And so I haven't taken you to it but  
13 this trial running procedure provides for an AVKR, which we had defined yesterday, an  
14 aggregate vehicle kilometre availability ratio, ---

15                  **MR. MATTHEW SLADE:** Yes.

16                  **MS. CHRISTINE MAINVILLE:** --- of 98 percent, right?

17                  **MR. MATTHEW SLADE:** Correct.

18                  **MS. CHRISTINE MAINVILLE:** And that is -- and, sorry; that's the  
19 12-day average has to be 98 percent, I believe.

20                  **MR. MATTHEW SLADE:** Yes.

21                  **MS. CHRISTINE MAINVILLE:** And that aligns with what RTM  
22 would be held to following revenue service, pursuant to the project agreement; correct?

23                  **MR. MATTHEW SLADE:** Correct.

24                  **MS. CHRISTINE MAINVILLE:** And you explained that that was to  
25 protect -- that was done purposely to protect RTM against penalties that it would incur if  
26 those targets were not met?

27                  **MR. MATTHEW SLADE:** It was. I mean, it made complete sense  
28 to set the pass criteria, the criteria by which we would be measured over the next 30

1 years of the concession.

2 **MS. CHRISTINE MAINVILLE:** Right. It's only logical to have it  
3 match what you're going to be held to during service.

4 **MR. MATTHEW SLADE:** Correct.

5 **MS. CHRISTINE MAINVILLE:** And you indicated you didn't want  
6 to go into service with something that was going to fall short of the reliability targets,  
7 right?

8 **MR. MATTHEW SLADE:** We were trying to avoid that, yes.

9 **MS. CHRISTINE MAINVILLE:** Yeah. Otherwise you're setting  
10 yourself up, or you're setting RTM up to fail, basically.

11 **MR. MATTHEW SLADE:** Correct.

12 **MS. CHRISTINE MAINVILLE:** And why, in July 2019, when you  
13 know there are some reliability challenges with the trains and the system, and everyone  
14 is eager to make RSA, why still, then, would you have set those metrics at the level you  
15 set them at?

16 **MR. MATTHEW SLADE:** Sorry; can you repeat that?

17 **MS. CHRISTINE MAINVILLE:** Well, I'm just wondering, because  
18 we've talked about how there was -- everybody was eager to get to RSA ---

19 **MR. MATTHEW SLADE:** Yes.

20 **MS. CHRISTINE MAINVILLE:** --- and to get trial running complete,  
21 right?

22 **MR. MATTHEW SLADE:** Yes.

23 **MS. CHRISTINE MAINVILLE:** And you know that the trains may  
24 be ready for trial running on paper, but there are reliability issues.

25 **MR. MATTHEW SLADE:** Yes.

26 **MS. CHRISTINE MAINVILLE:** So, I'm just wondering why you,  
27 nevertheless, maintained those criteria at that point in time?

28 **MR. MATTHEW SLADE:** Because that's what we were going to be

1 measured to. I also -- you know, everybody was under pressure, and, again, the way of  
2 ensuring that any of the issues that we had were being closed out was to keep that  
3 pressure on, and this was another form of that pressure.

4 **MS. CHRISTINE MAINVILLE:** Okay. And we can bring this  
5 document down. Thank you. Trial running doesn't start off so well, correct?

6 **MR. MATTHEW SLADE:** Correct.

7 **MS. CHRISTINE MAINVILLE:** You have to pause, and then, as we  
8 said, restart?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** And then there were some ups and  
11 downs, right?

12 **MR. MATTHEW SLADE:** Yes.

13 **MS. CHRISTINE MAINVILLE:** But by that time, everyone was  
14 banking on a particular RSA date, correct?

15 **MR. MATTHEW SLADE:** Well, the RSA date was a targeted date,  
16 but I -- I don't know that we were banking on it.

17 **MS. CHRISTINE MAINVILLE:** Okay. I believe you indicated in  
18 your interview that everybody was working towards a particular RSA date, and by  
19 "everyone," I include the City.

20 **MR. MATTHEW SLADE:** Yes.

21 **MS. CHRISTINE MAINVILLE:** Right. And that, eventually, it  
22 became clear that the way things were going, that date would not be met?

23 **MR. MATTHEW SLADE:** It was at risk, yes.

24 **MS. CHRISTINE MAINVILLE:** Okay. Which was not good for  
25 either OLRTC or the City?

26 **MR. MATTHEW SLADE:** Correct.

27 **MS. CHRISTINE MAINVILLE:** And so, the metrics that you had  
28 carefully crafted, that we just went through, end up changing, right?



1                   **MR. MATTHEW SLADE:** Yes.

2                   **MS. CHRISTINE MAINVILLE:** And so, explain to us how that  
3 came about.

4                   **MR. MATTHEW SLADE:** So, I can't remember the exact day, but  
5 we were in, I was going to say, in the middle of trial running. We were in the process,  
6 and we had had a -- we hadn't scored the day yet. It was shortly before the meeting,  
7 which was generally held at 2:00 in the afternoon, and we were all at the maintenance  
8 facility at Belfast where most of us were co-located.

9                   And shortly before the meeting started — a number of us were in  
10 the room — I got -- myself and Peter Lauch were asked to step out of the room to have  
11 a conversation with Mr. Troy Charter from OC Transpo, and Mr. Charter said that Mr.  
12 Manconi wanted to have a conversation with us regarding the criteria for trial running  
13 later that day.

14                   So, we went back into the room. We undertook the scoring for the  
15 day, and I think later that afternoon or very early the next morning, we went and had a  
16 meeting with Mr. Manconi down at -- I think it was probably in the RAMP room again  
17 down at the OC Transpo offices at St. Laurent.

18                   **MS. CHRISTINE MAINVILLE:** Right. And I should have perhaps  
19 made this clear before, but the trial running review team did not include Mr. Manconi,  
20 correct?

21                   **MR. MATTHEW SLADE:** Correct.

22                   **MS. CHRISTINE MAINVILLE:** This was a team that had  
23 representatives of RTM, RTG, OC Transpo, the city, and OLRTC as well as the  
24 independent certifier, right?

25                   **MR. MATTHEW SLADE:** And the maintainer as well, yes.

26                   **MS. CHRISTINE MAINVILLE:** The maintainer, yes, RTM. But not  
27 Alstom?

28                   **MR. MATTHEW SLADE:** Correct.

1                   **MS. CHRISTINE MAINVILLE:** And so, the City is represented  
2 there, and we did, indeed, speak with Mr. Holder yesterday. He was a member of the  
3 trial running review team, right?

4                   **MR. MATTHEW SLADE:** Yes, he was.

5                   **MS. CHRISTINE MAINVILLE:** Okay. And Mr. Charter as well  
6 was?

7                   **MR. MATTHEW SLADE:** Yes.

8                   **MS. CHRISTINE MAINVILLE:** So, the City and OC Transpo are  
9 there, but Mr. Manconi is not one of the members of the trial running review team, but  
10 you're told he would like a meeting; is that -- do I have that right?

11                  **MR. MATTHEW SLADE:** Correct, yes.

12                  **MS. CHRISTINE MAINVILLE:** Okay. And so, go on in terms of  
13 what conversation ends up taking place.

14                  **MR. MATTHEW SLADE:** So, Peter and I met with John, and I'm  
15 pretty sure Troy was there. I think Michael Morgan was there as well. And at that point,  
16 I was presented or we were presented with the RFI that you mentioned earlier, and that  
17 was the first time in which I had seen it, and it was suggested that if OLRTC presented  
18 that RFI back to the City at that point, the City would accept its contents and would  
19 agree to change the timetable.

20                  **MS. CHRISTINE MAINVILLE:** Okay. And this was an agreement  
21 that had come about about what the requirements for trial running would be back in  
22 2017, correct?

23                  **MR. MATTHEW SLADE:** Correct.

24                  **MS. CHRISTINE MAINVILLE:** And you said if, did you say,  
25 OLRTC or RTG submitted it, the City would accept it?

26                  **MR. MATTHEW SLADE:** I think I said OLRTC, because we owned  
27 the document, you know, the trial running document that you put on the screen earlier  
28 that I authored -- co-authored. So, the way -- obviously, the way the contractual

1 documents flow is OLRTC will produce the documents, submit them to RTG for RTG to  
2 formally submit to the City.

3 **MS. CHRISTINE MAINVILLE:** Right. And you indicated during  
4 your interview that it was to come from our RTG for audit purposes?

5 **MR. MATTHEW SLADE:** Yes.

6 **MS. CHRISTINE MAINVILLE:** And so, what did you mean by that?

7 **MR. MATTHEW SLADE:** So, that was a phrase that was used by  
8 the City at the time, was that whatever we were doing had to be auditable.

9 **MS. CHRISTINE MAINVILLE:** And so, in terms of following the  
10 process that -- yes?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** And so, on paper, it shouldn't come  
13 from the City, was that the idea?

14 **MR. MATTHEW SLADE:** I don't know whether it was where it  
15 came from. It was just that whatever we were doing had to be formally documented and  
16 be auditable. The whole process.

17 **MS. CHRISTINE MAINVILLE:** Got it.

18 **MR. MATTHEW SLADE:** Irrespective of who wrote what. I mean,  
19 the original author of that RFI was the City.

20 **MS. CHRISTINE MAINVILLE:** Okay. And so, is that what OLRTC  
21 and RTG proceed to do?

22 **MR. MATTHEW SLADE:** Yes.

23 **MS. CHRISTINE MAINVILLE:** Okay. And I'll take you to this letter,  
24 if you can identify it, COW 0158931.

25 **--- EXHIBIT NO. 137:**

26 COW0158931 – Trial Running Procedures – 16 August 2019

27 **MS. CHRISTINE MAINVILLE:** Do you see this letter? And it's  
28 addressed to Michael Morgan, who was a director at that time of the O-Train

1 construction office, right?

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** And if we go at the bottom just to  
4 see if you recognize it, it's a letter, as you say, sent by RTG, so signed by Mr. Lauch.

5 **MR. MATTHEW SLADE:** Correct.

6 **MS. CHRISTINE MAINVILLE:** But if you go a bit lower, you're  
7 copied on the letter?

8 **MR. MATTHEW SLADE:** Yes, I am.

9 **MS. CHRISTINE MAINVILLE:** Okay. So, do you recall having  
10 seen this letter?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** Okay. And so, maybe this assists  
13 with the date. If we go back to the top, it's dated August 16<sup>th</sup>, 2019.

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** So, would that be the date the  
16 criteria changed, or the next day?

17 **MR. MATTHEW SLADE:** It probably changed that day.

18 **MS. CHRISTINE MAINVILLE:** Okay. And what's indicated here, if  
19 we go to the third paragraph of the letter, which effectively is the point of the letter, it  
20 indicates, "Subject to agreement by the trial running review team, the test criteria used  
21 as part of trial running test procedure..." that's your REV 2 procedure, correct, that  
22 we've seen?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** "...will be set to reflect the targets  
25 agreed to in the above mentioned RFI," right?

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. CHRISTINE MAINVILLE:** And if we go to the -- or look at the  
28 first paragraph, that explains this RFI that was agreed to in 2017?

1 **MR. MATTHEW SLADE:** Yes.

2 **MS. CHRISTINE MAINVILLE:** And it indicates in the second  
3 sentence, "RFI 0266 confirmed an agreement between all parties on an average daily  
4 AVKR of 96 per cent or higher over 9 of 12 days evaluated over a 12-day moving  
5 window of passing days," right?

6 **MR. MATTHEW SLADE:** Correct.

7 **MS. CHRISTINE MAINVILLE:** So, those were two of the main  
8 changes, correct, or two of the main differences between the RFI and the document, the  
9 trial running procedure you had written, which was that AVKR was going to go from 98  
10 per cent to 96 per cent, right?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** And it would be an average  
13 evaluated over the highest of 9 of 12 days?

14 **MR. MATTHEW SLADE:** Correct.

15 **MS. CHRISTINE MAINVILLE:** As opposed to a full 12 days?

16 **MR. MATTHEW SLADE:** Yes.

17 **MS. CHRISTINE MAINVILLE:** And then at paragraph 2 of the  
18 letter, I think there's some effort to set out a rationale for this. So, if we look at that, it  
19 says,

20 "While Schedule 20, Appendix V of the project agreement,  
21 provides specific performance targets as a threshold before  
22 financial deduction factors are implemented, these target  
23 numbers will be adjusted in service to remove all non-Project  
24 Co. causes, and are therefore not a true reflection of the  
25 passenger experience."

26 So, it's suggesting that the criteria should be lower because, in  
27 reality, after revenue service, you may have non-Project Co. causes that could affect  
28 availability; right?

1                   **MR. MATTHEW SLADE:** Correct.

2                   **MS. CHRISTINE MAINVILLE:** But am I right that this was -- it was  
3 accounted for in your trial running procedure, these non-Project Co. causes as we've  
4 seen, yeah?

5                   **MR. MATTHEW SLADE:** Yes.

6                   **MS. CHRISTINE MAINVILLE:** And then the second sentence  
7 says,

8                                   "Further, some of the ad hoc failure management  
9 scenarios over some of the trial running days  
10 invariably affects the average AVKR rendering  
11 specific targets impractical on those dates." (As read)  
12 Right?

13                   **MR. MATTHEW SLADE:** Yes.

14                   **MS. CHRISTINE MAINVILLE:** But these ad hoc failures or  
15 scenarios also could be accounted for under your trial running procedure; right?

16                   **MR. MATTHEW SLADE:** Yes.

17                   **MS. CHRISTINE MAINVILLE:** And then the other change that  
18 occurs, if we look at the last paragraph on this page,

19                                   "Further to the trial running team monitoring  
20 undertaken to date, we've now completed five days of  
21 testing that demonstrate an ability to operate with a  
22 maximum number of vehicles in service when  
23 required." (As read)

24                   And that's the 15 vehicles, right, that you've demonstrated ---

25                   **MR. MATTHEW SLADE:** Correct.

26                   **MS. CHRISTINE MAINVILLE:** --- could be used -- could be  
27 operated at once? And then it's indicated,

28                                   "Five days of testing was completed, including

1 maximum service capacity on August 9<sup>th</sup>, 12<sup>th</sup> and  
2 13<sup>th</sup>, and weekend capacity on August 10<sup>th</sup> and 11.  
3 We plan to proceed to a subsequent phase of testing  
4 where we provide a service that matches or exceeds  
5 the expected passenger volumes during the launch  
6 period. This plan requires 13 vehicles during the  
7 morning peak and 13 vehicles during the afternoon  
8 peak and will be measured against RFIO266 targets."  
9 (As read)

10 So that's the other changes that -- instead of running 15 vehicles  
11 during the morning peak hour, you'll proceed to run 13; right?

12 **MR. MATTHEW SLADE:** Right. Correct.

13 **MS. CHRISTINE MAINVILLE:** And am I right that this reduction in  
14 the number of vehicles to be run was because you were struggling with running 15  
15 vehicles together; right?

16 **MR. MATTHEW SLADE:** Yes, and as it says here in this letter  
17 that, you know, we -- there were -- you know, 13 was far more achievable than 15.

18 **MS. CHRISTINE MAINVILLE:** M'hm. Right. Am I right that at this  
19 time it was not known that the reduction from 15 to 13 would also be applied to revenue  
20 service? So you didn't yet know that during revenue service, you would be effectively  
21 permitted to run 13 as opposed to 15?

22 **MR. MATTHEW SLADE:** I don't think we did at the time. We -- I  
23 don't know whether it was us or -- or certainly RTG received a service change  
24 notification, I think it was after -- it was after this date, correct. The ---

25 **MS. CHRISTINE MAINVILLE:** Right.

26 **MR. MATTHEW SLADE:** --- service commencement to 13 tracks.

27 **MS. CHRISTINE MAINVILLE:** Okay. So the expectation, at least  
28 on your end, was still that you would have to make 15 trains run once passengers were

1 actually on board; right?

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** But you were no longer being held  
4 to that during trial running?

5 **MR. MATTHEW SLADE:** Correct.

6 **MS. CHRISTINE MAINVILLE:** And this reduction in the number of  
7 vehicles also meant reducing, of course, the number of kilometres that had to be met;  
8 right? It had to be proportionate to the number of vehicles you're running?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** Okay. And you explained  
11 previously that you and Mr. Allman did an exercise to see what percentage you got in  
12 terms of AVKR, I take it, if you only ran 13 instead of 15?

13 **MR. MATTHEW SLADE:** I believe so.

14 **MS. CHRISTINE MAINVILLE:** And that was to see whether you  
15 would pass by running fewer trains. Okay.

16 And so effectively, these changes made it easier to complete trial  
17 running; fair?

18 **MR. MATTHEW SLADE:** Fair, yes.

19 **MS. CHRISTINE MAINVILLE:** And so I wonder what happened  
20 then to the goal that you had initially of protecting what I think you call your sister  
21 organization, RTM?

22 **MR. MATTHEW SLADE:** Well, that goal was gone.

23 **MS. CHRISTINE MAINVILLE:** And why is that? It became more  
24 important to reach RSA?

25 **MR. MATTHEW SLADE:** Certainly, it was -- achieving RSA was  
26 important for all parties, as we discussed earlier, you know, as I hope everyone can  
27 appreciate that the pressure when you're going through these trial running days, and  
28 days are not going so well, that the level of pressure increases and the -- there was a



1 desire to not miss another RSA date.

2 **MS. CHRISTINE MAINVILLE:** Right. And I think you candidly  
3 explained during your interview that the penalties that might be incurred by the  
4 maintenance people during revenue service, at the end of the day, no longer weighed  
5 as much in the balance when you were looking at potentially further delay and the  
6 impact that that had on OLRTC?

7 **MR. MATTHEW SLADE:** Correct.

8 **MS. CHRISTINE MAINVILLE:** And it was understood, correct, Mr.  
9 Slade, that this change increased the chances that there would be performance or  
10 reliability issues at RSA -- after RSA I should say?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** You indicated it was done with the  
13 full understanding of the implications, correct, and that's also on the City's end?

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** And am I right that there were still --  
16 or there were several events a day that needed attending to; right? That were arising  
17 during the trial running period?

18 **MR. MATTHEW SLADE:** Sorry, can you say that again?

19 **MS. CHRISTINE MAINVILLE:** Yes. There were events, or failure  
20 events, or -- that were taking place during trial running every day?

21 **MR. MATTHEW SLADE:** Yes.

22 **MS. CHRISTINE MAINVILLE:** And so was it known that it would  
23 be difficult to make the requisite number of trains available every day?

24 **MR. MATTHEW SLADE:** It was a daily struggle, yes.

25 **MS. CHRISTINE MAINVILLE:** Okay. We can take this down, and  
26 we'll just look at some of the score cards. If we go to COW 0270758? And you've  
27 alluded to this, Mr. Slade, but the way the trial running function is the trial running review  
28 team, there was a morning team and an afternoon team; right?

1 **MR. MATTHEW SLADE:** Yes.

2 **MS. CHRISTINE MAINVILLE:** And maybe you could just explain  
3 briefly what each role -- the respective roles were for those teams?

4 **MR. MATTHEW SLADE:** Certainly. So the morning team was,  
5 again, made up of representatives of all of the participant organizations. And the  
6 morning team's responsibility was to gather and analyze all of the data from the  
7 previous day. The amount of data that was being measured and gathered was  
8 significant, and they were processing that, reviewing it, and then presenting to the trial  
9 running review team in the afternoon, which met at two p.m. They were presenting that  
10 data after it had been processed such that the trial running review team could then  
11 make an assessment on pass or fail on each of the different metrics.

12 **MS. CHRISTINE MAINVILLE:** Right. And so you were on the  
13 afternoon team; correct?

14 **MR. MATTHEW SLADE:** Correct.

15 **MS. CHRISTINE MAINVILLE:** And that was sort of the senior level  
16 team you would say?

17 **MR. MATTHEW SLADE:** Yes.

18 **MS. CHRISTINE MAINVILLE:** The representatives of the morning  
19 team meeting, they were from the same organizations and entities, right, but different  
20 people?

21 **MR. MATTHEW SLADE:** Yes.

22 **MS. CHRISTINE MAINVILLE:** Okay. And so you would receive a  
23 recommendation on the various criteria, a pass/fail recommendation; correct?

24 **MR. MATTHEW SLADE:** Yes.

25 **MS. CHRISTINE MAINVILLE:** Along with some of the data that  
26 they had analyzed?

27 **MR. MATTHEW SLADE:** Correct. Substantiation from the data.

28 **MS. CHRISTINE MAINVILLE:** Right. Okay. And then -- but they

1 wouldn't provide a recommendation for the overall day in ---

2 **MR. MATTHEW SLADE:** No.

3 **MS. CHRISTINE MAINVILLE:** --- terms of pass/fail?

4 **MR. MATTHEW SLADE:** No.

5 **MS. CHRISTINE MAINVILLE:** That was up to the trial -- the  
6 afternoon trial running review team?

7 **MR. MATTHEW SLADE:** Yes.

8 **MS. CHRISTINE MAINVILLE:** Okay. And what the afternoon  
9 team did was go through this -- these score cards that I'll take you to, right, and assess  
10 each category, and then come to a determination on the full day?

11 **MR. MATTHEW SLADE:** Yes.

12 **MS. CHRISTINE MAINVILLE:** Okay. And so if we could go to day  
13 -- I think it's around page 22. They're not paginated on the document, but it's August  
14 14<sup>th</sup>. Yes. Okay. So this is -- well, first of all, trial running began on July 29<sup>th</sup>, 2019;  
15 right?

16 **MR. MATTHEW SLADE:** Yes.

17 **MS. CHRISTINE MAINVILLE:** And then we explained that there  
18 was a restart, but here we're quite a ways through, about midway through; right, August  
19 14<sup>th</sup>?

20 **MR. MATTHEW SLADE:** Yes.

21 **MS. CHRISTINE MAINVILLE:** And what we see here is that's a  
22 repeat day; right?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** At the top right corner is the overall  
25 result for the day; right?

26 **MR. MATTHEW SLADE:** Correct.

27 **MS. CHRISTINE MAINVILLE:** And then I take it it's at least in part  
28 because you've got a failure on the operational category, including the trial time and the

1 headway?

2 **MR. MATTHEW SLADE:** Yes.

3 **MS. CHRISTINE MAINVILLE:** Okay.

4 **MR. MATTHEW SLADE:** And also during – or on the  
5 maintenance practices?

6 **MR. MATTHEW SLADE:** Yes.

7 **MS. CHRISTINE MAINVILLE:** It's just at the bottom there.

8 **MR. MATTHEW SLADE:** It's on the bottom, yes.

9 **MS. CHRISTINE MAINVILLE:** Okay.

10 And so you have a repeat day on the 14<sup>th</sup> and then if we go to the  
11 next page the same thing occurs on the 15<sup>th</sup>, in terms of a repeat?

12 **MR. MATTHEW SLADE:** Yes.

13 **MS. CHRISTINE MAINVILLE:** Okay. And so you have those two  
14 days that are not going well before we get to the 16<sup>th</sup> which is, as you've explained, the  
15 day the criteria changes?

16 **MR. MATTHEW SLADE:** Yes.

17 **MS. CHRISTINE MAINVILLE:** Right? So that's effectively, would  
18 you say – what prompts this, is you're having challenges at that point in time; right?

19 **MR. MATTHEW SLADE:** Yes.

20 **MS. CHRISTINE MAINVILLE:** And so we go to the 16<sup>th</sup>. Thank  
21 you. And now – that day is now a pass?

22 **MR. MATTHEW SLADE:** Yes.

23 **MS. CHRISTINE MAINVILLE:** And everybody signs off; right? I  
24 think you've explained in your interview how there was a consensus, there had to be a  
25 consensus; correct, every day?

26 **MR. MATTHEW SLADE:** Every day there was a consensus; we  
27 wouldn't leave the room until there was. But we were never in the room for long period  
28 of time; the consensus was achieved very quickly.

1                   **MS. CHRISTINE MAINVILLE:** Right. You indicated – you didn't  
2 see or witness any significant disputes as you explained in the afternoon meetings;  
3 right?

4                   **MR. MATTHEW SLADE:** No, the meetings went very smoothly.

5                   **MS. CHRISTINE MAINVILLE:** And you have at the bottom of the  
6 page, we see, for instance, everybody signing off on any given day; right?

7                   **MR. MATTHEW SLADE:** Correct.

8                   **MS. CHRISTINE MAINVILLE:** Then if we go to August 19<sup>th</sup>, so  
9 about three pages later. I just want to see whether this is one example of, for instance,  
10 the travel time being a fail, and that being one of the requirements; right?

11                  **MR. MATTHEW SLADE:** Yes.

12                  **MS. CHRISTINE MAINVILLE:** But the overall day being a pass?

13                  **MR. MATTHEW SLADE:** Yes.

14                  **MS. CHRISTINE MAINVILLE:** And if – we see under  
15 “maintenance delivery”, the maintenance practices also failed but the day's a pass;  
16 right?

17                  **MR. MATTHEW SLADE:** Yes.

18                  **MS. CHRISTINE MAINVILLE:** And so if you – and we touched on  
19 that in terms of the trial running procured, that there would be notes typically that  
20 needed to be made to explain why ---

21                  **MR. MATTHEW SLADE:** Yes.

22                  **MS. CHRISTINE MAINVILLE:** --- that would be done? And so at  
23 the bottom of the page there are some notes. And what you have there: “Maintenance  
24 Practices due to an occurrence processes and procedures are being adjusted”.

25                  **MR. MATTHEW SLADE:** Yes.

26                  **MS. CHRISTINE MAINVILLE:** Do you recall what that was in  
27 reference to?

28                  **MR. MATTHEW SLADE:** No, I do not.

1                   **MS. CHRISTINE MAINVILLE:** It's not very detailed, but there was

2 ---

3                   **MR. MATTHEW SLADE:** No, looking at now, you know,  
4 obviously I was never expecting it to appear like this, but I – yes, it should be a more  
5 fulsome note.

6                   **MS. CHRISTINE MAINVILLE:** Okay. And then the same for  
7 number four, is:

8                   “The travel time not considered to impact the overall result for the  
9 day due to only one trip being affected by a GIDS activation.”

10                  **MR. MATTHEW SLADE:** Yes.

11                  **MS. CHRISTINE MAINVILLE:** And do you recall what that  
12 means?

13                  **MR. MATTHEW SLADE:** So “GIDS” is an acronym for “guideway  
14 intrusion detection system” which is a system that is at all the stations and at the tunnel  
15 portals; essentially it's a sensor that senses if anybody has – anybody or anything has  
16 encroached on the guideway and it safely brings the trains to a stop such that there's no  
17 risk to the personnel operator. And there was obviously a GIDS activation on this day  
18 that delayed one of the trains partially. And I'm assume, and it is an assumption, that  
19 this was a genuine GIDS activation rather than a false GIDS activation for it to be  
20 accounted as not to have an impact.

21                  Now the way the GIDS work, it could have been a false positive; it  
22 could have been, you know – we've had a lot of storms recently. If you have a windy  
23 day there's a carrier bag or litter blowing around in the air, it would trigger the GIDS, so I  
24 can't recall what actually happened on this day, but we obviously had a conversation  
25 and agreed that whatever triggered the GIDS and affected the passage of that one train,  
26 that it was one of those non-project co events and that it wouldn't be counted in, you  
27 know, under the terms of the project agreement.

28                  **MS. CHRISTINE MAINVILLE:** Okay. If we go to the last – and,

1 again, there would have been a consensus on those, right, on those exclusions?

2 **MR. MATTHEW SLADE:** Yes. And actually those notes were  
3 drafted and agreed in the meeting room with all of the participants. So the language  
4 that was used – first, I apologize that it's not very fulsome; it was crafted by all of those  
5 people that have signed their names. We agreed what the language would be for those  
6 notes on that page.

7 **MS. CHRISTINE MAINVILLE:** Okay. And if we go to the last day,  
8 August 22<sup>nd</sup>, right here, that was the last day of trial running; right?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** And, again, that was a pass even  
11 though the headway was not met?

12 **MR. MATTHEW SLADE:** Yes.

13 **MS. CHRISTINE MAINVILLE:** And if we'd go to the note, the  
14 number two one says "RFIO266 – morning peak above minimum availability of 88 per  
15 cent."

16 **MR. MATTHEW SLADE:** Yes.

17 **MS. CHRISTINE MAINVILLE:** And I think that's – am I right, that  
18 that's because the minimum daily AVKR of 90 per cent becomes 88 per cent for peak  
19 service; right?

20 **MR. MATTHEW SLADE:** Yes.

21 **MS. CHRISTINE MAINVILLE:** And just so we have it, at the very  
22 last page of this document is a tally of the days that ultimately end up counting for the  
23 12 days of trial running; so after the restart – and there are a few days, I should point  
24 out at the beginning in July and the first couple of days of August, that are not reflected  
25 here. But after the restart you basically have counted there the days 1 through 12 that  
26 end up counting towards trial running; right?

27 **MR. MATTHEW SLADE:** Correct.

28 **MS. CHRISTINE MAINVILLE:** And in the middle of that are the

1 two repeats that we indicate – that we brought up that lead to the change in criteria as  
2 of the 16<sup>th</sup>?

3 **MR. MATTHEW SLADE:** Correct.

4 **MS. CHRISTINE MAINVILLE:** And we see the 12 day AVKR  
5 average which, I take it, would be the 9 out of 12; it ends up being 96.9 per cent?

6 **MR. MATTHEW SLADE:** Correct.

7 **MS. CHRISTINE MAINVILLE:** Okay. And so had the criteria  
8 remained 98 per cent that wouldn't have passed; right?

9 **MR. MATTHEW SLADE:** Correct. Well, we can assume; I mean  
10 we might have had 12 perfect days, but I doubt it.

11 **MS. CHRISTINE MAINVILLE:** Well, presumably the change in the  
12 criteria wouldn't have affected the performance of the vehicles?

13 **MR. MATTHEW SLADE:** That's very true.

14 **MS. CHRISTINE MAINVILLE:** And we see after August 16<sup>th</sup> the  
15 AVKR averages, the percentage there in the column 92 per cent, 96 per cent, and  
16 that's, as we've pointed out, now with fewer vehicles and fewer kilometres to be run;  
17 right?

18 **MR. MATTHEW SLADE:** Correct.

19 **MS. CHRISTINE MAINVILLE:** We can take this down. I just have  
20 a couple of questions, Mr. Commissioner, before we can take a break.

21 So, am I right, Mr. Slade, that there were several failures under  
22 maintenance practices; right?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** And what were those challenges,  
25 to your recollection?

26 **MR. MATTHEW SLADE:** We had a number of, if I recall correctly,  
27 it's a long time ago; part of it was around the vehicles being ready for launch in the  
28 morning, so in the very early hours of the morning, so between 3:00 o'clock and 4:00



1 o'clock in the morning. There's a requirement to demonstrate that those vehicles are  
2 ready for service which involves providing documentation from RTM to the City that  
3 presents the vehicles as being ready for service. And if I recall correctly, quite often the  
4 paperwork was late under the terms of what was supposed to be done. I think the  
5 paperwork was due to be in the hands of the City an hour before trains were launched,  
6 and quite often it was scramble what papers were being presented at the time while the  
7 train was sitting and waiting to be launched on the main line.

8 We also had an issue with how work orders were being managed  
9 or closed in a timely fashion in accordance with the project agreement for the  
10 maintenance work.

11 **MS. CHRISTINE MAINVILLE:** Okay. And in terms of closing the  
12 work orders, do I understand though that there was an issue with the work orders – a  
13 number of them – or the struggles with them being compounded by the wind, which the  
14 City was going about initiating them?

15 **MR. MATTHEW SLADE:** So that the volume of work orders that  
16 were being introduced to us, I would say, excessive and probably not representative of  
17 what was expected of the system. And we also had a situation where some work  
18 orders were being raised for items that were on the minor deficiency list and, therefore,  
19 shouldn't have been treated as work orders at all.

20 So, there was -- and some of that was being filtered out through the  
21 morning -- part of what the morning sessions were doing for the trial running team.  
22 They were going through those work orders. But at the same time, and I know you've  
23 seen it, the minor deficiencies list which at the time obviously had a huge number of  
24 deficiencies on it, all of them minor, but someone was having to go through the work  
25 orders that had been raised overnight and correlate those against the deficiencies.

26 And, obviously, when you've got different individuals, because  
27 they're shift work, typing things into work orders and then interpreting that and  
28 understanding whether it correlates across to a minor deficiency or not was a huge task.

1 And so, there were instances where there were work orders raised that were, in fact --  
2 or shouldn't, in fact, have been work orders.

3 **MS. CHRISTINE MAINVILLE:** Right, but ---

4 **MR. MATTHEW SLADE:** It was just the volume of work was just --  
5 of processing that data overnight, you know, the maintenance hours are very, very  
6 short, and it was far more than anyone had ever expected it to be.

7 **MS. CHRISTINE MAINVILLE:** Right. And just so we're clear,  
8 that's because the minor deficiencies list is agreed upon at the time of substantial  
9 completion, right?

10 **MR. MATTHEW SLADE:** Correct.

11 **MS. CHRISTINE MAINVILLE:** So, there had been agreed upon  
12 minor deficiencies at that point in time, and what you're saying is work orders were  
13 being entered, as I understand it, by City representatives?

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** For items that were on the minor  
16 deficiencies list, and so, effectively, shouldn't have been -- shouldn't have counted,  
17 right?

18 **MR. MATTHEW SLADE:** Correct.

19 **MS. CHRISTINE MAINVILLE:** Because they had been agreed  
20 upon as deficiencies?

21 **MR. MATTHEW SLADE:** Correct.

22 **MS. CHRISTINE MAINVILLE:** Okay. But am I right, though, that  
23 at the end of the day, what you could tell from the maintenance performance during trial  
24 running was that the teams were not well drilled to their processes and procedures, I  
25 think you explained?

26 **MR. MATTHEW SLADE:** Yes, that's a very fair reflection of the  
27 situation.

28 **MS. CHRISTINE MAINVILLE:** And there were ---

1                   **MR. MATTHEW SLADE:** Everybody was new to their job at that  
2 point.

3                   **MS. CHRISTINE MAINVILLE:** Right. Right. Okay. And so, there  
4 were issues also with the response time to events?

5                   **MR. MATTHEW SLADE:** Yes. Work orders get categorized under  
6 the project agreement as to what their response time and rectification time are, and  
7 some of that was unclear, again, partly through how they were prioritized or entered by  
8 the person or persons entering them, and also how they were interpreted by the people  
9 reading them.

10                  **MS. CHRISTINE MAINVILLE:** Okay. And last question before the  
11 break, the score cards we went through, they were considered confidential, right?

12                  **MR. MATTHEW SLADE:** Yes.

13                  **MS. CHRISTINE MAINVILLE:** The trial running score cards.

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MS. CHRISTINE MAINVILLE:** In fact, am I right that, aside from  
16 the pass/fail outcome, what happened in that trial running review team was deemed to  
17 be confidential?

18                  **MR. MATTHEW SLADE:** Yes. From the outset, the general  
19 agreement and understanding was what was discussed and recorded in the trial running  
20 review team meetings and in that meeting room stayed in that meeting room until the  
21 end of trial running. At the time, there was a situation where information, detailed  
22 information about the project was getting leaked into the media, and the media had  
23 information that was not in the public domain, and there was a very conscious decision  
24 that we didn't -- we collectively, the City, OLRTC, RTG, all parties, didn't want these  
25 score cards getting out into the public domain until trial running had completed.

26                         And so, we took the decision long before the process started that  
27 we would -- the people in the room would know what was going on each day, and the  
28 seniors, be it Board members and executives, would be told if it was a pass or a fail, but

1 they would not get to see the detail of the score card or the content of the score card  
2 until after trial running was completed.

3 **MS. CHRISTINE MAINVILLE:** So, even senior management, your  
4 CEO ---

5 **MR. MATTHEW SLADE:** Correct. I mean, my CEO asked me,  
6 and I flatly refused, but I would tell him if it was a pass or a fail. The same with Board  
7 members at ExCo from RTG and OLRTC, none of them received those score cards.  
8 Some of them probably hadn't seen them until this inquiry started.

9 **MS. CHRISTINE MAINVILLE:** And your expectation was that that  
10 would be the case on the City side as well? Mr. Manconi or others wouldn't seen them?

11 **MR. MATTHEW SLADE:** Correct.

12 **MS. CHRISTINE MAINVILLE:** And, again, you said there were  
13 concerns about leak. What was the concern about that information getting out?

14 **MR. MATTHEW SLADE:** Well, because any information, but  
15 obviously, this was -- this information was -- at the time, the political pressure and the  
16 media pressure was, I guess, peaking, and you know, there had been a very public  
17 announcement about RSA, and, you know, there were media statements about the 12  
18 days starting, and how each was going to go, and Mr. Manconi had made a public  
19 statement, I can't remember if it was at FEDCO or at Transit Commission, saying that  
20 the media would not be told what the score would be on a day-to-day basis, and they  
21 would found out at the end of the 12 days. But he had already set those ground rules  
22 publicly. And so, it was very important that we ensured that everything stayed within the  
23 project.

24 **MS. CHRISTINE MAINVILLE:** Okay. Thank you. I think we'll take  
25 the morning break, Mr. Commissioner.

26 **COMMISSIONER HOURIGAN:** That's fine. We'll take the break.

27 **MS. CHRISTINE MAINVILLE:** Thank you. So, we'll be back in 15  
28 minutes, Mr. Slade.

1                   **THE REGISTRAR:** Order. All rise. The Commission will recess  
2 for 15 minutes.

3 --- Upon recessing at 10:34 a.m.

4 --- Upon resuming at 10:53 a.m.

5                   **THE REGISTRAR:** The hearing has resumed.

6                   **COMMISSIONER HOURIGAN:** All right. Please proceed.

7                   **MS. CHRISTINE MAINVILLE:** Thank you. Hi, Mr. Slade.

8                   **MR. MATTHEW SLADE:** Hello.

9                   **MS. CHRISTINE MAINVILLE:** Okay. I'm going to take you to an  
10 email that you received on June 24<sup>th</sup>, 2019, mapping out what, at that point in time, was  
11 devised as the plan, I think, for RSA and revenue service. So, RTC 00885419.0001. I'll  
12 say that again. It's a long number. RTC 00885419.0001.

13 **--- EXHIBIT NO. 138:**

14                                   RTC00885419.0001 – RE: RTG Executive Committee  
15                                   Meeting – 24 June 2019

16                   **MS. CHRISTINE MAINVILLE:** Okay. So, this is an email, you'll  
17 see, from Peter Lauch and you are amongst the list of recipients, do you see?

18                   **MR. MATTHEW SLADE:** Yes.

19                   **MS. CHRISTINE MAINVILLE:** Okay. And it's dated -- I think we  
20 see the top right corner, as I said, June 24<sup>th</sup>, 2019, and it's being sent to ExCo, which I  
21 understand to be RTG's executive committee, right?

22                   **MR. MATTHEW SLADE:** Right.

23                   **MS. CHRISTINE MAINVILLE:** Just based on the subject line.

24                   **MR. MATTHEW SLADE:** Okay. The recipients are not all -- I don't  
25 believe are all RTG executive committee members.

26                   **MS. CHRISTINE MAINVILLE:** Okay. Some of them were?

27                   **MR. MATTHEW SLADE:** Some of them were, and some of them  
28 were executive committee members for OLRTC.

1                   **MS. CHRISTINE MAINVILLE:** Got it. Okay. So, it's being sent to  
2 both, effectively, or members of both, at least.

3                   **MR. MATTHEW SLADE:** Members of both.

4                   **MS. CHRISTINE MAINVILLE:** Okay. And Mr. Lauch indicates that  
5 the City wants, and RTG, an executive committee called this Friday, right?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MS. CHRISTINE MAINVILLE:** First line? Okay. And then when  
8 he says, "Matt and I met with John Manconi and team today," do you know if that's in  
9 reference to you?

10                  **MR. MATTHEW SLADE:** I assume so. I don't think we had any  
11 other Matthews on the project at the time.

12                  **MS. CHRISTINE MAINVILLE:** Got it. So, you would have met, it  
13 appears, with John Manconi and his team "today to map out some key dates," right?

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MS. CHRISTINE MAINVILLE:** "Steve Kanellakos and John  
16 Manconi will want to hear from ExCo that we are all aligned"?

17                  **MR. MATTHEW SLADE:** Yes.

18                  **MS. CHRISTINE MAINVILLE:** And then it says "the dates are,"  
19 and I'll go through some of them with you. So, how do those dates come about, if you  
20 recall that meeting or the surrounding circumstances?

21                  **MR. MATTHEW SLADE:** So, I don't specifically remember the  
22 meeting, and so, it's hard for me to say anything, really. I think -- I mean, the dates are  
23 there, and I can't recall whether they were proposed by us or proposed by the City.

24                  **MS. CHRISTINE MAINVILLE:** Okay. That was going to be my  
25 question, if they came from the City or you, and you don't recall.

26                  **MR. MATTHEW SLADE:** Some of them would have come from us,  
27 certainly, because some of them, the City -- so, for instance, the third one there, July  
28 8<sup>th</sup>, Thales safety certificate for software in hand and upgraded, et cetera. So, that

1 would have come from us as they were our subcontractor.

2 **MS. CHRISTINE MAINVILLE:** Okay.

3 **MR. MATTHEW SLADE:** But I think these were probably worked  
4 out collectively as to, you know, what the final few weeks of the project would look like,  
5 trying to map out the final steps.

6 **MS. CHRISTINE MAINVILLE:** Okay. And what you have there is  
7 July 9<sup>th</sup> would be the plan for when RTG would submit a new substantial completion  
8 application and commit to a revenue service availability date of August 16<sup>th</sup>?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** And so, this is before any trial  
11 running takes place, right?

12 **MR. MATTHEW SLADE:** Yes.

13 **MS. CHRISTINE MAINVILLE:** And it effectively, at least as a plan,  
14 boxes you in in terms of trial running, and how long that would go on for?

15 **MR. MATTHEW SLADE:** As the word is tentative, but it does. And  
16 I think, for me, the more telling one is the one before July 10<sup>th</sup> where the City publicized  
17 the RSA date.

18 **MS. CHRISTINE MAINVILLE:** Correct, and I was going to ask you  
19 about that. So, FEDCO meeting, and the plan is that you'll submit or RTG will submit  
20 the new substantial completion application on the 9<sup>th</sup>, and on the 10<sup>th</sup>, in relation to a  
21 FEDCO meeting, the City will publicize the RSA date, right?

22 **MR. MATTHEW SLADE:** That's what that says, yes.

23 **MS. CHRISTINE MAINVILLE:** And to be clear, that's not the  
24 revenue service date, not the launch, but the ---

25 **MR. MATTHEW SLADE:** No.

26 **MS. CHRISTINE MAINVILLE:** --- revenue service availability date  
27 that Project Co. meets? And, again, that's before trial running, so to your point, making  
28 that public would create some pressure, right, and box you in on that?

1                   **MR. MATTHEW SLADE:** Correct. By publicizing that, they are, I'm  
2 going to say, predicting when trial running will both start with the July 13<sup>th</sup> date, but also,  
3 they are predicting it will be complete by the 16<sup>th</sup> of August.

4                   **MS. CHRISTINE MAINVILLE:** Right. Exactly. And so -- and here,  
5 the tentative date for it to start was July 13<sup>th</sup>?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MS. CHRISTINE MAINVILLE:** Okay. And then, again, August  
8 16<sup>th</sup>, revenue service availability date.

9                   **MR. MATTHEW SLADE:** Yes.

10                  **MS. CHRISTINE MAINVILLE:** And beneath that, it says, "13 July  
11 for trial running start is earliest date. OLRTC and RTM may want to use the week of  
12 15<sup>th</sup> July for practice runs and to make sure RTM is ready to take on the revenue  
13 service support role," right?

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MS. CHRISTINE MAINVILLE:** So, there was, at least at that time  
16 in June, some thought that you might take a week to do practice runs before trial  
17 running?

18                  **MR. MATTHEW SLADE:** Yes.

19                  **MS. CHRISTINE MAINVILLE:** And that didn't happen, right?

20                  **MR. MATTHEW SLADE:** Sorry?

21                  **MS. CHRISTINE MAINVILLE:** That did not occur?

22                  **MR. MATTHEW SLADE:** Not a week.

23                  **MS. CHRISTINE MAINVILLE:** Not a week, yeah. Okay. And then  
24 the next line is, "Committing to the date is important to the City as they need to book  
25 drivers/schedules by 17<sup>th</sup> July for the three weeks of parallel bus/LRT service that will  
26 start second week of September, which is linked to a 16 August RSA date," right?

27                  **MR. MATTHEW SLADE:** Correct.

28                  **MS. CHRISTINE MAINVILLE:** So, at that point in time, the



1 expectation, or from what I take, the City's plan is to have four weeks between RSA and  
2 revenue service, right? To the extent that you have service starting the second week of  
3 September and RSA being scheduled for August 16<sup>th</sup>? I guess that could be  
4 somewhere between three and four weeks.

5 **MR. MATTHEW SLADE:** Yeah, I -- yes.

6 **MS. CHRISTINE MAINVILLE:** Okay.

7 **MR. MATTHEW SLADE:** Sorry, I had -- I don't -- I'm just reading  
8 this email again for, you know, the first time since whenever it was sent.

9 **MS. CHRISTINE MAINVILLE:** Okay.

10 **MR. MATTHEW SLADE:** "Three weeks of parallel bus/LRT service  
11 that will start the second week of September." Okay.

12 **MS. CHRISTINE MAINVILLE:** Had that been your understanding  
13 in terms of what the City's plan was in respect of the time that they would have as  
14 between the RSA date and the start of public service?

15 **MR. MATTHEW SLADE:** That wasn't my understanding, but ---

16 **MS. CHRISTINE MAINVILLE:** What was your understanding, sir?

17 **MR. MATTHEW SLADE:** Well, I think I said it when we had our  
18 previous conversation. I think my understanding was that I understand it might be out of  
19 date order, but my understanding was that Mr. Manconi, and I can't remember when,  
20 whether it was at that July 10<sup>th</sup> FEDCO meeting or whether it was a different one, he  
21 had been -- he had publicly stated they need 4 weeks after RSA to get ready for  
22 revenue service. So I was always expecting that to be a minimum because I talked  
23 about earlier about betting in and what have you. I know it was in their gift, but even  
24 four weeks, I would have thought would have been short.

25 And I know also, although it came -- I'm pretty sure it came after  
26 this email, there was the letter that we discussed earlier where the City changed the  
27 service level where we would be starting with 13 trains, which said the City intended to  
28 start revenue service in Q4 of 2019.

1                   **MS. CHRISTINE MAINVILLE:** Right. And I'll take you to that letter  
2 in a minute. But what did you understand needed to be done within that period of time  
3 between RSA and revenue service, or what were the City's intentions, to the extent you  
4 knew?

5                   **MR. MATTHEW SLADE:** I didn't know at that time. I think at the  
6 time of this email in June, I probably wasn't aware. As we were going through trial  
7 running, or maybe it was even at the end of trial running, I understood that they were  
8 going to be carrying on with running a -- I'm going to call it a simulated service because  
9 there wouldn't be passengers on board, and they would be finalizing some  
10 familiarization, I'll call it, with emergency services, whether that first responders, police,  
11 fire, paramedics, et cetera, and they would be training -- continuing to train their staff,  
12 and training and coaching what they referred to as their red-vest ambassadors, who  
13 were the people that would be on the ground, at the stations, at the time of service  
14 commencement to interact with the public, because the stations are actually unmanned.  
15 They always plan to be unmanned, but the City had a plan to have staff there in the  
16 short term of revenue service to help people familiarize themselves with how to get in  
17 and out of the station, some of the stations along and have different access routes in  
18 and out, depending on where you want to go to when you surface or when you leave  
19 the station.

20                   **MS. CHRISTINE MAINVILLE:** Okay. So you expected at least  
21 that they would be taking the time to familiarize everybody with the system and getting  
22 ready for a public launch; right?

23                   **MR. MATTHEW SLADE:** Correct.

24                   **MS. CHRISTINE MAINVILLE:** And public launch being, of course,  
25 a City decision, not anything that Project Co. has anything to do with?

26                   **MR. MATTHEW SLADE:** Correct.

27                   **MS. CHRISTINE MAINVILLE:** And this timeline that we've just  
28 looked at in this email, that wasn't met; right?

1                   **MR. MATTHEW SLADE:** Sorry, wasn't met, no.

2                   **MS. CHRISTINE MAINVILLE:** Was not, yes, sorry. But was there  
3 subsequently another similar plan with revised dates to your recollection?

4                   **MR. MATTHEW SLADE:** I don't recall. I would be -- I would  
5 expect there to have been, but I honestly cannot recall.

6                   **MS. CHRISTINE MAINVILLE:** Okay.

7                   **MR. MATTHEW SLADE:** You were -- once -- I guess once trial  
8 running had started or thereabouts, you know, from July, or not long after this, OLRTC  
9 and RTT, all the parties were meeting on a more frequent basis. And when I say more  
10 frequent, it was probably more than weekly. Sometimes we would meet two or three  
11 times a week. To go through a schedule of this nature, we talked about the RAMP  
12 meetings and, you know, we would go through their ready-for-rail steps. I don't know  
13 what you call them, but their ready-for-rail steps, and they would have dates and things  
14 in. So we would monitor this, the City would monitor it, and we would have input to it  
15 from here on in, I guess.

16                   **MS. CHRISTINE MAINVILLE:** Okay. And, for instance, so here  
17 we had July 9<sup>th</sup> as the date on which RTG would submit its new substantial completion  
18 application. Do you recall that was actually done on July 26<sup>th</sup>?

19                   **MR. MATTHEW SLADE:** Yes, I believe so.

20                   **MS. CHRISTINE MAINVILLE:** And the City I believe accepted the  
21 same day. If we could take this document down and pull up RTG00332043? I'll say it  
22 again, RTG00332043.

23                   **--- EXHIBIT No. 139:**

24                                   RTG00332043 – Sustantial Completion Notice – 26 July  
25                                   2019

26                   And this is just the cover email, but indicating -- Mr. Morgan from  
27 the City -- sorry, indicating to Ms. Monica Sechiari, who was the independent certifier,  
28 and Mr. Lauch that,

1 "As detailed in an independent letter, the City's  
2 opinion is that RTG has satisfied the conditions for  
3 issuance of the substantial completion certificate."

4 (As read)

5 Right? So this was on July 26<sup>th</sup>, we see from the top; right?

6 **MR. MATTHEW SLADE:** Yes.

7 **MS. CHRISTINE MAINVILLE:** And I just want to know, he  
8 indicates,

9 "Separately, we agree that the substantial completion  
10 certificate can be issued in advance of the minor  
11 deficiency list." (As read)

12 And do I take it from that that the minor deficiency list hadn't yet  
13 quite been finalized or ---

14 **MR. MATTHEW SLADE:** Well, the minor deficiency list, as I know  
15 you now, is a very long document and was -- I'm going to use the word fluid, because as  
16 fast as things were being added, we were also closing things out. But I think -- I'm not a  
17 hundred percent certain, but I think the reason it was probably a little bit afterwards is  
18 because one of the components of the minor deficiency list is actually pricing the work  
19 that's on it. And because there are -- well, there are contractual reasons for that, and I  
20 think and obviously that has to be signed off and agreed by the independent certifier.  
21 And that minor deficiency list covered both fixed infrastructure and vehicles as well,  
22 which I know you're aware of.

23 **MS. CHRISTINE MAINVILLE:** M'hm.

24 **MR. MATTHEW SLADE:** I suspect it was just the fact that there  
25 was still -- you know, it was a very fluid document. We were working every single day to  
26 try and reduce the number of items on it, and obviously, adjust prices and --  
27 accordingly, and make sure that, I guess at the point in time, it gets frozen and agreed.

28 **MS. CHRISTINE MAINVILLE:** Okay. And so despite substantial

1 completion not being applied for on July 9<sup>th</sup> as the previous email indicated, but instead  
2 on July 26<sup>th</sup>, am I right, and I'll just take you to a document if you don't recall, but that  
3 this -- at this time, the City is still -- or there's still a timeline that's being -- that the City is  
4 still looking to, which is the same RSA date of August 16<sup>th</sup> ---

5 **MR. MATTHEW SLADE:** I believe that was the case, yes.

6 **MS. CHRISTINE MAINVILLE:** Yes? Okay. So and let's just go to  
7 a letter, RTG00400436.0001.

8 **--- EXHIBIT No. 140:**

9 RTG00400436.0001 – RE: Revenue Service Requirement  
10 for Q4, 2019 – 31 July 2019

11 **MS. CHRISTINE MAINVILLE:** So this is a letter dated July 31<sup>st</sup>,  
12 2019. And if we go to the bottom, it's from Mr. Morgan, writing to RTG, and you'll see  
13 there back towards the top that the anticipated RSA date is, in the City's mind, still  
14 August 16<sup>th</sup>, 2019; right?

15 **MR. MATTHEW SLADE:** Yes.

16 **MS. CHRISTINE MAINVILLE:** And so even though, as we've  
17 seen, substantial completion was only achieved later July -- not later than this, than  
18 August 16<sup>th</sup>, but later than had originally been planned on July 26<sup>th</sup>?

19 **MR. MATTHEW SLADE:** Yes.

20 **MS. CHRISTINE MAINVILLE:** And so that leaves still less time for  
21 the trial running period; right, in terms of what -- in comparison to the original email --  
22 the email we saw where the plan had been laid out?

23 **MR. MATTHEW SLADE:** Yes, but I think it's important to  
24 understand that RSA date did not constrain trial running.

25 **MS. CHRISTINE MAINVILLE:** Okay.

26 **MR. MATTHEW SLADE:** Or it shouldn't have.

27 **MS. CHRISTINE MAINVILLE:** Well, it did only to the extent that,  
28 as we've seen, the criteria changed because ---

1 **MR. MATTHEW SLADE:** Yes.

2 **MS. CHRISTINE MAINVILLE:** --- you could see the -- everybody  
3 could see the clock ticking; right?

4 **MR. MATTHEW SLADE:** Correct.

5 **MS. CHRISTINE MAINVILLE:** And you've -- I take it this is the  
6 letter you were referencing earlier where you said the City indicated its intention to  
7 commence revenue service in early Q4.

8 **MR. MATTHEW SLADE:** Yes.

9 **MS. CHRISTINE MAINVILLE:** Right? Of 2019?

10 **MR. MATTHEW SLADE:** Yes.

11 **MS. CHRISTINE MAINVILLE:** And so, you recalled that being your  
12 expectation, and Q4 being October onwards, right?

13 **MR. MATTHEW SLADE:** That's what I understand that to mean,  
14 yes.

15 **MS. CHRISTINE MAINVILLE:** Okay. And so, at that time, on July  
16 31<sup>st</sup>, 2019, while the City appears to still be targeting an August 16<sup>th</sup> RSA date, it looks  
17 as though it has at least considered pushing back the commencement of service from  
18 the second week of September that was referred to in the earlier email to Q4, so  
19 October, right?

20 **MR. MATTHEW SLADE:** That was how I interpreted that, yes.

21 **MS. CHRISTINE MAINVILLE:** To have a month in between as  
22 previously planned, or at least as you understood was planned, right?

23 **MR. MATTHEW SLADE:** Yes. The four weeks that had previously  
24 been publicly mentioned.

25 **MS. CHRISTINE MAINVILLE:** Okay. And yet, I think, as we know,  
26 after this letter, and despite the fact that RSA was only -- notice of RSA was sent on  
27 August 30<sup>th</sup>, 2019, the City commenced service on September 14<sup>th</sup>, 2019?

28 **MR. MATTHEW SLADE:** Yes.

1 **MS. CHRISTINE MAINVILLE:** So, not in Q4, right?

2 **MR. MATTHEW SLADE:** Correct.

3 **MS. CHRISTINE MAINVILLE:** September 14<sup>th</sup> not being in Q4?

4 **MR. MATTHEW SLADE:** Yes.

5 **MS. CHRISTINE MAINVILLE:** Do you know why the City made  
6 that decision, that change?

7 **MR. MATTHEW SLADE:** No, and -- no. I think we talked about it  
8 before. It was a surprise. I used the word "shock," and when they announced  
9 September the 14<sup>th</sup>, Peter Lauch and I were there personally, and it was a shock. We  
10 were not expecting that at all. So, I mean, it was in their gift to make it whatever day  
11 they wanted it to be, so -- but I had always had an expectation that it would be a  
12 minimum of four -- whatever date RSA was, whatever date, you know, that it would be  
13 four weeks afterwards.

14 **MS. CHRISTINE MAINVILLE:** Okay. And you explained the  
15 circumstances to me previously for how you learned about this, but can you just walk us  
16 through?

17 **MR. MATTHEW SLADE:** Certainly. So, we had got to the end of  
18 trial running successfully, based on the change criteria, and Mr. Manconi and via the  
19 Mayor's Office, as well, asked RTG and OLRTC if we could provide a -- I'm going to call  
20 it a celebratory train ride for councilors, City staff, dignitaries, from one end of the line to  
21 the other end of the line, culminating in a -- I'm going to call it a meeting, but a gathering  
22 at City Hall, which we did.

23 So, the City arranged a lot of staffing coordination with RTG and  
24 OLRTC. We met at City Hall. We got on a bus, you know, one of the City OC Transpo  
25 buses. We got driven to a train station. We boarded a train. We went all the way along  
26 the alignment. The media were onboard. And we then went to City Hall where the  
27 Mayor, Mr. Manconi, Transit Commission Chair Hubley, and some other people made --  
28 well, the Mayor made the announcement in City Hall that they would be opening on the

1 14<sup>th</sup> of September, and that was the first we heard of it.

2 **MS. CHRISTINE MAINVILLE:** And your recollection, at least at the  
3 time of your interview, was that this was around August 30<sup>th</sup> that this would have taken  
4 place?

5 **MR. MATTHEW SLADE:** I think that was the date, from memory. I  
6 mean, it's in the media. It's easy to find the date. There's photographs of everybody  
7 onboard the train, and there's the photograph when the City asked us to give the Mayor  
8 -- or asked Peter to give the Mayor a key in recognition of revenue service availability  
9 being achieved.

10 **MS. CHRISTINE MAINVILLE:** Okay. And I just want to take you to  
11 a letter -- well, the notice of RSA which was sent on August 30<sup>th</sup>, 2019. COW0159308  
12 So, you'll see this being the revenue service availability notice sent  
13 to Mr. Morgan on August 30<sup>th</sup>?

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** And just at the end, it does  
16 reference a September 14<sup>th</sup>, 2019, revenue service date, if we go to the third page?

17 All right. Here, "We trust that the..." -- this is Mr. Lauch writing this  
18 letter, "We trust that the above satisfies the requirements for revenue service  
19 availability, and we look forward to the official launch of the Confederation Line on  
20 Saturday, September 14<sup>th</sup>, 2019."

21 So, do I take it from your evidence that this date was -- that Mr.  
22 Lauch would have learned about this date on the same day as well?

23 **MR. MATTHEW SLADE:** Yes. That was my understanding.

24 **MS. CHRISTINE MAINVILLE:** Okay. Because he, at least,  
25 appears to know, by the time he sends this letter, that that's the public launch date.

26 **MR. MATTHEW SLADE:** So, that was -- this letter might have  
27 been sent after that announcement.

28 **MS. CHRISTINE MAINVILLE:** Okay. And is it accurate to say that



1 OLRTC was not consulted about the public launch date?

2 **MR. MATTHEW SLADE:** Correct.

3 **MS. CHRISTINE MAINVILLE:** Was RTG, to your knowledge?

4 **MR. MATTHEW SLADE:** I don't know.

5 **MS. CHRISTINE MAINVILLE:** And do you have any ---

6 **MR. MATTHEW SLADE:** I don't think so, but I don't know.

7 **MS. CHRISTINE MAINVILLE:** Okay. Similarly, do you have any  
8 knowledge of whether Alstom was consulted?

9 **MR. MATTHEW SLADE:** I think the first time we all knew about it  
10 was when the Mayor made that announcement and it hit the news that day.

11 **MS. CHRISTINE MAINVILLE:** Okay. And we can bring this down,  
12 thank you.

13 How were the trains running during the two -- what effectively  
14 became, I think, a two-week period between RSA and revenue service, right?

15 **MR. MATTHEW SLADE:** Yes.

16 **MS. CHRISTINE MAINVILLE:** How were the trains running during  
17 that period of time?

18 **MR. MATTHEW SLADE:** I think they were improving. I think there  
19 were still issues, but I think they were improving.

20 **MS. CHRISTINE MAINVILLE:** Do you recall in your interview  
21 indicating there were good days and bad days?

22 **MR. MATTHEW SLADE:** Yes.

23 **MS. CHRISTINE MAINVILLE:** And that's fair? And you, in fact,  
24 indicated that was putting it politely?

25 **MR. MATTHEW SLADE:** Yes. I think when they were bad days,  
26 they were very bad, and when they were good, they were, you know, very good. There  
27 was not often an in-between, I think is the best way to describe it. It was either great or  
28 it was bad.

1                   **MS. CHRISTINE MAINVILLE:** Okay. It was apparent, though, that  
2 there would be reliability issues going into service, right?

3                   **MR. MATTHEW SLADE:** Yes.

4                   **MS. CHRISTINE MAINVILLE:** And did it continue to be apparent  
5 that maintenance was not fully ready?

6                   **MR. MATTHEW SLADE:** In my opinion, yes.

7                   **MS. CHRISTINE MAINVILLE:** Okay. And do you have anything to  
8 say about an assertion that there may not have been clarity from RTG on the state of  
9 the system to the City?

10                  **MR. MATTHEW SLADE:** I'm not sure I understand the question.

11                  **MS. CHRISTINE MAINVILLE:** So, if -- one of the -- I believe it was  
12 Parsons -- a witness from Parsons indicated that they were not sure there was clarity  
13 from RTG about the state of the system going into revenue service or RSA. From your  
14 perspective, what was the level of transparency, if you will, or clarity about the state of  
15 the system for the City?

16                  **MR. MATTHEW SLADE:** I think it was 100 per cent clear. I think  
17 what everyone needs to remember is that the -- well, it depends on whether you're  
18 differentiating the City from OC Transpo. OC Transpo, part of the City, are operating  
19 the trains, i.e., they're providing all the drivers, light rail operators, electric rail operators.  
20 They're providing all the control room staff and all the team and leadership team that  
21 manage all of that. So, they're all heavily involved.

22                         And the City, as well, all the way up the chain, is also aware. And  
23 we -- we were meeting probably daily. If we weren't meeting daily, we were certainly  
24 exchanging correspondence and phone calls daily. Everyone was acutely aware of the  
25 situation that was evolving on a daily basis.

26                  **MS. CHRISTINE MAINVILLE:** From your perspective ---

27                  **MR. MATTHEW SLADE:** No one was hiding anything. It was plain  
28 to see. The media could see it. Everyone could see it. Everyone could see when

1 trains were stationary, stuck, not moving, whatever, or when, you know, there was -- it  
2 was highly visible, you know. Yeah, I don't really know what else to say. I don't think --  
3 no one was hiding anything, and I don't think it was possible to hide anything.

4 **MS. CHRISTINE MAINVILLE:** In terms of maintenance  
5 preparedness, is it your view that the City and/or OC Transpo had visibility into the lack  
6 of maintenance preparedness?

7 **MR. MATTHEW SLADE:** I think the City and OC Transpo had  
8 visibility of everything, yes.

9 **MS. CHRISTINE MAINVILLE:** Okay.

10 **MR. MATTHEW SLADE:** Their consultants and the City were -- we  
11 shared the same building. They were there onsite. There was -- we were having daily  
12 meetings. I don't think there was any -- like I said, they were -- everyone was  
13 participating in those meetings; everyone was represented and everybody knew what  
14 was happening.

15 **MS. CHRISTINE MAINVILLE:** Do you believe the operators were  
16 ready to address incidents on the line when revenue started?

17 **MR. MATTHEW SLADE:** I don't think so; I'd like to make a  
18 clarification when we say "operators".

19 **MS. CHRISTINE MAINVILLE:** M'hm.

20 **MR. MATTHEW SLADE:** So you have -- I can just mention, so  
21 you have -- they call themselves "EROs", "electric rail operators", which are the train  
22 drivers and then you have control room operators who are actually in the main control  
23 room operating the control system and operating the wider system.

24 I think they were, much like we have the bathtub curve that we've  
25 talked about with regards to reliability, you also have the reverse of that; you have a  
26 learning curve; so the resources that were in those roles. And they were all relatively  
27 new to the job and to the system and I think there was a steep learning curve, and I  
28 think it's at that point that we went into service. I think we were still quite a way down

1 the beginning of that learning curve.

2 **MS. CHRISTINE MAINVILLE:** And that had an impact in terms of  
3 the time needed to resolve issues after the start service; right?

4 **MR. MATTHEW SLADE:** Yes, I think the lack of familiarity with  
5 the system compounded some of the issues that we had that were reliability.

6 **MS. CHRISTINE MAINVILLE:** Because eventually over time that  
7 response time improved quite significantly; correct?

8 **MR. MATTHEW SLADE:** Yes. And I – you know, even this week  
9 we are still seeing similar reliability issues on certain components that we saw in 2019,  
10 but in 2019 it would have an impact on the service that would affect it for tens of  
11 minutes, if not hours. And when they impact it now this week, you either don't notice  
12 the impact at all or its less than ten minutes, quite often less than five minutes. And I  
13 think that is a reflection of the fact that everybody has learned how the system works  
14 and how to react to different situations.

15 **MS. CHRISTINE MAINVILLE:** So both on the maintenance side  
16 and the operational side; correct?

17 **MR. MATTHEW SLADE:** Yes. All parties.

18 **MS. CHRISTINE MAINVILLE:** All parties, okay.

19 Were OLRTC, or to your knowledge RTG, consulted about when  
20 the parallel bus service should be cut off?

21 **MR. MATTHEW SLADE:** No.

22 **MS. CHRISTINE MAINVILLE:** Okay. Did anyone provide any  
23 input to your recollection on that?

24 **MR. MATTHEW SLADE:** I'm fairly certain – again, whether it was  
25 a RAMPM meeting or not, it was certainly in the RAMPM room. I'm fairly sure we had a  
26 discussion about whether or not it was sensible to – I'm going to use phrase "turn  
27 them off" – turn all the buses off in one go rather than do it gradually. You know, we  
28 talked about a soft launch for the trains. There was a conversation about whether

1 turning the buses off all in one go was a wise decision or whether or not that should  
2 have been progressive. I certainly remember that conversation. But the City's decision  
3 was to turn them all off in one go.

4 **MS. CHRISTINE MAINVILLE:** Okay. Of the second application  
5 for substantial completion ---

6 **MR. MATTHEW SLADE:** Yes.

7 **MS. CHRISTINE MAINVILLE:** --- am I right that some of the items  
8 that had been deemed critical for RSA in respect of that application, so critical to be  
9 completed prior to RSA, I understand some of those made it to the term sheet; correct?

10 **MR. MATTHEW SLADE:** Yes, I believe so.

11 **MS. CHRISTINE MAINVILLE:** And the term sheet being the  
12 agreement that was entered into between the City and RTG to achieve RSA despite  
13 certain requirements of the project agreement not having been met; right?

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** So those were not completed prior  
16 to RSA or indeed prior to revenue service; is that your understanding?

17 **MR. MATTHEW SLADE:** Yes.

18 **MS. CHRISTINE MAINVILLE:** And if we could bring up the term  
19 sheet just for a moment, that's RTG00151032. You would have been familiar with those  
20 even though RTG signs it; correct?

21 **--- EXHIBIT No. 141:**

22 RTG00151032 – Revenue Service Availability Term Sheet

23 **MR. MATTHEW SLADE:** Correct.

24 **MS. CHRISTINE MAINVILLE:** And I just want to go to a couple of  
25 items with you. If we go to the second page, first we see the agreement that ultimately  
26 is achieved for RTG to be permitted to achieve revenue service availability with 13  
27 double-car trains available for use during morning peak period service as opposed to  
28 15?

1 **MR. MATTHEW SLADE:** Yes.

2 **MS. CHRISTINE MAINVILLE:** And then “completion of trial  
3 running”, the third row there:

4 “RTG will be permitted to successfully complete trial running when  
5 it achieves a target availability of 96 per cent on nine out of 12 days  
6 compared to 98 per cent as set out in RTG’s test procedure dated  
7 May 25<sup>th</sup>, 2017, as agreed upon in RFI2066 dated May 11<sup>th</sup>, 2017.”

8 Right?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. CHRISTINE MAINVILLE:** And so the fact that this was  
11 included in the term sheet, is that a reflection of the fact that it was considered a  
12 requirement, basically that the trial running procedure that had been agreed to, agreed  
13 to, was effectively incorporated as a requirement that then had to be addressed in this  
14 term sheet?

15 **MR. MATTHEW SLADE:** That’s my understanding.

16 **MS. CHRISTINE MAINVILLE:** And just following up on that, from  
17 your perspective would the City have been able to take the position that trial running  
18 had not been successfully completed if the original criteria in the trial running procedure  
19 had not been met?

20 **MR. MATTHEW SLADE:** Sorry, can you say that again?

21 **MS. CHRISTINE MAINVILLE:** Sure. It’s a bit of a convoluted  
22 question. Let’s say the criteria had not been changed.

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** And the trial running review  
25 procedure that you had originally devised and that had been agreed to by all parties,  
26 had been in place.

27 **MR. MATTHEW SLADE:** Yes.

28 **MS. CHRISTINE MAINVILLE:** If the requirements in there had not

1 been met, would the City have been able to take the position that OLRTC had not  
2 successfully completed trial running?

3 **MR. MATTHEW SLADE:** Yes.

4 **MS. CHRISTINE MAINVILLE:** Okay. Even though, for instance,  
5 the 98 or 96 per cent and those metrics are not in the PA, the project agreement itself?

6 **MR. MATTHEW SLADE:** That's an interesting thought. I think,  
7 you know, they signed off on the procedure – I mean from my perspective, that was the  
8 case. You know, if you didn't achieve the metrics – you know, trial running, like I said  
9 before, it could have gone on for six months. It would have taken as long as it would  
10 have taken to achieve the metrics that were in there. That was my thought process.  
11 And I'm pretty sure at a point in time that I had said to someone that, you know, this  
12 could take six months. And so the fact that the PA wasn't prescriptive with regards to  
13 the percentages; I mean it was a gap in the PA. But we wrote that document to close  
14 that gap.

15 **MR. MATTHEW SLADE:** Right. And that was done jointly.

16 **MS. CHRISTINE MAINVILLE:** Right. And that's effectively what  
17 I'm trying to get at, because of course you're not a lawyer interpreting the project  
18 agreement or what could have, in law, been sufficient or not, but in terms of OLRTC's  
19 perspective, it was holding itself to the criteria that had been agreed to with the City,  
20 right, in terms of achievement of trial running?

21 **MR. MATTHEW SLADE:** Yes.

22 **MS. CHRISTINE MAINVILLE:** Okay.

23 **MR. MATTHEW SLADE:** It was – if you compare it to all of the  
24 testing that we did in testing commissioning – and I want to make sure everyone  
25 understands, I know you do, that trial running is not part of testing commissioning, it  
26 comes afterwards. But all those tests that we did for testing commissioning, we,  
27 OLRTC, wrote those test procedures with our supply chain, with who ever it might have  
28 been who was involved in those subsystems. And then we scored ourselves against

1 those. And that is the same process the trial running would have taken. We wrote a  
2 test procedure – well, it wasn't a test – we wrote a procedure and with a pass or fail  
3 criteria, and we scored ourselves against it. It's no different from the testing  
4 commissioning. We write a test that has a pass/fail criteria and you either pass or you  
5 don't.

6 **MS. CHRISTINE MAINVILLE:** Which is why, I take it, the criteria  
7 had to be formally changed and agreed to, right, midway through to change the ---

8 **MR. MATTHEW SLADE:** Yes.

9 **MS. CHRISTINE MAINVILLE:** Effectively, ORLTC, am I right,  
10 never told the City, you know, we don't need to meet the criteria, whether in the trial  
11 running procedure or the RFI, because they're not in the PA?

12 **MR. MATTHEW SLADE:** Correct. We never challenged -- I'm not  
13 aware of us ever challenging the contractual position of the PA with regards to trial  
14 running or it's scoring.

15 **MS. CHRISTINE MAINVILLE:** Okay. And then if we just scroll  
16 down a little bit, you'll see the term sheet also provides for RTG meeting to provide  
17 additional -- or some vehicle technicians, as well as door technicians, right?

18 **MR. MATTHEW SLADE:** Yes.

19 **MS. CHRISTINE MAINVILLE:** And that's because of some of the  
20 issues that were not fully addressed or that remained outstanding?

21 **MR. MATTHEW SLADE:** Yes.

22 **MS. CHRISTINE MAINVILLE:** And then if you go to the next page,  
23 I just want to ask about MSF maintenance equipment, and RTG needing to provide an  
24 updated execution plan for the maintenance of the MSF equipment, including the wheel  
25 lathe, car wash, and other planned equipment. What did that address?

26 **MR. MATTHEW SLADE:** So, as it says there, so the MSF is the  
27 maintenance facility at Belfast Road where all the maintenance is done to the trains,  
28 and it's where the maintenance organization is based. So, that's RTM and Alstom. OC



1 Transpo are in that building as well for booking on and off their drivers.

2 But as part of the maintenance for the vehicles, there are some key  
3 pieces of equipment. So, the wheel lathe that's listed there, the car wash, which is  
4 exactly what it says, and there are other critical pieces of equipment that are used to  
5 maintain the rolling stock of the trains.

6 And there was -- if I recall correctly at the time, the RTM  
7 subcontractor Alstom had been quite vocal about some of that equipment not being fully  
8 operational, or being -- the reliability of the performance of that equipment not being  
9 ideal. And so, this was a measure that the City wanted to put in place such that they  
10 couldn't -- people couldn't claim that the equipment was the cause of any delays or  
11 impairment to service.

12 **MS. CHRISTINE MAINVILLE:** So, this was to be done by  
13 September 9<sup>th</sup>, so ahead of the start of service, right?

14 **MR. MATTHEW SLADE:** It was to provide the execution plan by  
15 September ---

16 **MS. CHRISTINE MAINVILLE:** Oh, I see. Right. Yes, okay. So,  
17 there would have still been ---

18 **MR. MATTHEW SLADE:** Sorry.

19 **MS. CHRISTINE MAINVILLE:** No, go ahead.

20 **MR. MATTHEW SLADE:** Yeah. It was -- so, a lot of that  
21 equipment is very specialist. A lot of it is not sourced in Canada, and, as a result,  
22 technicians and people that specialized in that were having to be flown in from other  
23 countries. So, at the time, it was a plan -- it was more about a plan about how the  
24 equipment is kept operable a hundred per cent of the time. So, it was about service  
25 agreements or technicians coming to create -- undertake service work just to make sure  
26 that the availability of that equipment was a hundred per cent.

27 **MS. CHRISTINE MAINVILLE:** So, do I understand that for some  
28 period of time after service started, there were some -- still some issues with this

1 equipment?

2 **MR. MATTHEW SLADE:** There was a need to call in technicians  
3 post revenue service, yes.

4 **MS. CHRISTINE MAINVILLE:** Okay. And then just on the next  
5 page, there is a provision for increased monitoring that RTG needs to pay for by  
6 increased monitoring to be performed by STV ---

7 **MR. MATTHEW SLADE:** Yes.

8 **MS. CHRISTINE MAINVILLE:** --- in relation to ongoing vehicle  
9 maintenance monitoring, as well as Deloitte in relation to IMIRS monitoring?

10 **MR. MATTHEW SLADE:** Yes.

11 **MS. CHRISTINE MAINVILLE:** And why was that required?

12 **MR. MATTHEW SLADE:** Well, as you stated, so part of it was  
13 down to the performance of the vehicles, and I think with regards to IMIRS, it was more  
14 of an audit process because, you know, we had seen during trial running that there  
15 were, you know, I'm going to say issues with it. It's a piece of software that spoke for  
16 the job that manages a number of things, but it was -- it was a case of having, I assume,  
17 I think from recollection, an audit function over that to make sure — because it affected  
18 the payment mechanism — to make sure that everything was being processed  
19 correctly.

20 **MS. CHRISTINE MAINVILLE:** Okay. Am I right that there were  
21 significant retrofits left to be done, both in terms of quantum and scale at the time of  
22 RSA?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. CHRISTINE MAINVILLE:** And the ---

25 **MR. MATTHEW SLADE:** Sorry, you're talking about -- you're  
26 talking about trains?

27 **MS. CHRISTINE MAINVILLE:** Yes. Yes.

28 **MR. MATTHEW SLADE:** Yes.

1                   **MS. CHRISTINE MAINVILLE:** And the sheer volume of the  
2 retrofits that would need to be done in the MSF subsequent to RSA proved to be an  
3 issue, correct?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MS. CHRISTINE MAINVILLE:** I think you indicated it was never  
6 envisaged that you would be doing that work while trying to achieve service on a daily  
7 basis, right?

8                   **MR. MATTHEW SLADE:** Yes.

9                   **MS. CHRISTINE MAINVILLE:** And that's reflected by the fact -- or  
10 the issues, the challenges that were encountered, is reflected by the fact that more than  
11 two and a half years later, final completion has not been met, right? There is still some  
12 outstanding modifications to be made?

13                  **MR. MATTHEW SLADE:** Yes.

14                  **MS. CHRISTINE MAINVILLE:** And that tells you something, I  
15 expect, about the magnitude of the work that was deferred?

16                  **MR. MATTHEW SLADE:** Partly. I think it's been compounded  
17 and, I guess, delayed, extended, whatever word you want to use, for a number of  
18 reasons, and it's not just the sheer volume of work that needed to be done. Part of it is  
19 down to the other issues that the system has encountered that have delayed that ---

20                  **MS. CHRISTINE MAINVILLE:** Right.

21                  **MR. MATTHEW SLADE:** --- and the reason why we're here today.  
22 But there are a host of reasons as to why -- as to what has caused the delay in that  
23 regard.

24                  **MS. CHRISTINE MAINVILLE:** Okay. Got it. Okay. And we can  
25 take this down. I just want to take you to one last document, which is the RAMP report  
26 that I believe OC Transpo would devise. That's COW0435176.

27                  **--- EXHIBIT NO. 142:**

28                                   COW0435176 - RAMP Final Report to Program Management

1 Team - 17 July 2019

2 **MS. CHRISTINE MAINVILLE:** Do you recall, were these the  
3 reports that were issued for the purpose of RAMP meetings? So, if we go down a little  
4 bit maybe ---

5 **MR. MATTHEW SLADE:** They were presented. I don't know if  
6 they were -- we never -- they weren't issued to us.

7 **MS. CHRISTINE MAINVILLE:** Okay. They -- you basically --  
8 people went through these presentations during RAMP meetings that you attended?

9 **MR. MATTHEW SLADE:** Correct.

10 **MS. CHRISTINE MAINVILLE:** Okay. And this one, I believe, says  
11 it's the final report, status as of July 17<sup>th</sup>, 2019. And do you recall that this included a  
12 list of items that needed to be done from the City's perspective to be ready for rail?

13 **MR. MATTHEW SLADE:** Yes, I think so.

14 **MS. CHRISTINE MAINVILLE:** And let's just go to slide 4. Do you  
15 recall this list, the Go/No Go list?

16 **MR. MATTHEW SLADE:** Not specifically, and I think you asked  
17 me about this when we met before, and I asked if -- this is the document that I thought --  
18 but I thought the whole document was what you meant when you referred to the Go/No  
19 Go list. I didn't remember it being one specific slide within the slide deck. I thought it  
20 was the whole document.

21 **MS. CHRISTINE MAINVILLE:** Right.

22 **MR. MATTHEW SLADE:** That's why I was unsure whether you  
23 meant the RAMP slide deck or this. I don't remember this specific slide, but...

24 **MS. CHRISTINE MAINVILLE:** Okay, yeah, I didn't take ---

25 **MR. MATTHEW SLADE:** I don't remember the title. Let me put it  
26 that way. I certainly remember the contents.

27 **MS. CHRISTINE MAINVILLE:** Okay. You do remember going  
28 through this list at RAMP meetings?

1                   **MR. MATTHEW SLADE:** Vaguely, yes.

2                   **MS. CHRISTINE MAINVILLE:** Okay. And I just -- well, first of all,  
3 was it your understanding that these were things the -- items the City was tracking and  
4 that, from their perspective, was required in terms of going into service, so Go/No Go  
5 into service?

6                   Okay. And I just want to ask you about a couple of items on -- well,  
7 first of all, under vehicles, "Trains ready as per vehicle minimum operating standard."  
8 Do you know what that standard is?

9                   **MR. MATTHEW SLADE:** So, the -- so, again, you will have  
10 learned the railway is full of acronyms. We call that VMOS, V-M-O-S, and there is a --  
11 it's an Alstom document that is, I believe, agreed with the City that lists the -- I guess the  
12 simplest way to describe it is the minimum condition that the vehicle can go into service  
13 in on a daily basis.

14                   So, every train, I mentioned earlier, is inspected before it goes into  
15 service at 3:00 in the morning, 4:00 in the morning, and we -- RTM -- Alstom provides  
16 RTM, RTM provides the City with, I'm going to say, 15 sheets for 15 trains. They  
17 provide more because they have spares and whatever. They might provide 18 sheets,  
18 at which you'll have the status of those vehicles.

19                   And then the other thing that the VMOS includes is, again, I'm  
20 going to simply it slightly.

21                   So, the trains are highly technical and very clever, and they will tell  
22 via the control, via the display in the cab, it will come up with codes, a bit like your  
23 dashboard in your car. It will give you alarms and what have you. And those alarms,  
24 we call them IOS codes, they have, depending on the severity of them, will determine  
25 whether the train stays in service until the end of the line or needs to be removed from  
26 service. And so, that document is a document that is -- it was presented by Alstom  
27 originally and it was agreed at different levels, depending on those levels of issues with  
28 the vehicle.

1                   **MS. CHRISTINE MAINVILLE:** Okay.

2                   **MR. MATTHEW SLADE:** It's quite -- those documents exist at  
3 most -- I would say all transit agencies, but it is bespoke to that agency that to their  
4 vehicle.

5                   **MS. CHRISTINE MAINVILLE:** Okay. And I take it that was ready  
6 without knowing, you know, on any given day whether it was met, but when the trains  
7 went into service, there was an expectation they can meet that standard?

8                   **MR. MATTHEW SLADE:** Yes. They wouldn't go into service  
9 otherwise.

10                  **MS. CHRISTINE MAINVILLE:** Right. Okay. And then in terms of  
11 systems, if we just go down a little bit, in terms of the City's expectations that the  
12 systems be ready such that there were no major impacts to customer experience, would  
13 you say that that was ultimately met or not?

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MS. CHRISTINE MAINVILLE:** You think it was met despite the  
16 reliability concerns that we have discussed?

17                  **MR. MATTHEW SLADE:** Yes.

18                  **MS. CHRISTINE MAINVILLE:** So, you didn't expect major impacts  
19 to customer experience after the trains went into service?

20                  **MR. MATTHEW SLADE:** No.

21                  **MS. CHRISTINE MAINVILLE:** Okay. And in terms of the radio  
22 systems, tunnel ventilation systems, train control, and traction power are 100 per cent  
23 operational ---

24                  **MR. MATTHEW SLADE:** Yes.

25                  **MS. CHRISTINE MAINVILLE:** --- am I right that they weren't, in  
26 fact, at least the traction power wasn't 100 per cent operational?

27                  **MR. MATTHEW SLADE:** No, I think they were all 100 per cent  
28 operational, and the comment there which says, "train control Thales", I mean, the

1 system was operational because we were using it, but it was awaiting a final software  
2 release, which was due to be released just before revenue service, which is quite  
3 normal for signalling systems. You run on a -- you know, you are continually running on  
4 a test piece of software, for want of a better term, and then at the point of which you are  
5 ready to go into service, then you either put a patch onto it to pick up on any bugs that  
6 you've got, or you do, you know, a revenue service release, which is what this was for.

7 **MS. CHRISTINE MAINVILLE:** Okay. And so, that was effectively  
8 resolved and operational when the trains went into service, even if issues were  
9 encountered potentially later on, on some of these systems, right?

10 **MR. MATTHEW SLADE:** Yes.

11 **MS. CHRISTINE MAINVILLE:** Okay. And then just the last one,  
12 "System performance during trial running is sufficiently robust/resilient to absorb service  
13 impacts."

14 **MR. MATTHEW SLADE:** Yes.

15 **MS. CHRISTINE MAINVILLE:** Would you agree with me that the  
16 City perhaps did away with that item at the time of revenue service?

17 **MR. MATTHEW SLADE:** I think you would have to ask the City. I  
18 think from -- and I can't -- I can't -- I genuinely can't tell you. What I would say with  
19 regards to this is that the system was robust and resilient. And like we talked about  
20 maybe five minutes ago, a lot of it was about how the system was being operated.

21 **MS. CHRISTINE MAINVILLE:** Right. But that was something that  
22 was to be ---

23 **MR. MATTHEW SLADE:** We are still seeing issues this week that  
24 we saw in 2019, but it's the way it is being managed and operated, and that has  
25 changed through skills and learning and everything else. So, I don't think the  
26 robustness and the resilience of the system hasn't changed in that period of time  
27 dramatically. So, the system that was installed is the same system that was installed in  
28 2019.

1                   **MS. CHRISTINE MAINVILLE:** But trial running was meant to, in  
2 part, demonstrate that all the systems, including the operational and maintenance  
3 response time, were at least to the City's satisfaction?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MS. CHRISTINE MAINVILLE:** Right. Okay. And, as we  
6 discussed, there were -- those systems were not entirely ready. They have made a lot  
7 of progress since, right?

8                   **MR. MATTHEW SLADE:** Yes.

9                   **MS. CHRISTINE MAINVILLE:** Those are all my questions. Thank  
10 you very much, Mr. Slade.

11                   **COMMISSIONER HOURIGAN:** All right. Thank you, c. Mr. Slade,  
12 you are going to be now questioned by a number of lawyers for various participants in  
13 the inquiry. The first is the City of Ottawa.

14                   **MR. MATTHEW SLADE:** Understood.

15                   **MR. PETER WARDLE:** Thank you. Peter Wardle, last name W-A-  
16 R-D-L-E, for the City of Ottawa.

17 **--- CROSS-EXAMINATION BY MR. PETER WARDLE:**

18                   **MR. PETER WARDLE:** Good morning, Mr. Slade.

19                   **MR. MATTHEW SLADE:** Good morning.

20                   **MR. PETER WARDLE:** I wanted to start, Mr. Slade, if I can, with  
21 some background. You became systems director at OLRTC in April of 2018, correct?

22                   **MR. MATTHEW SLADE:** Correct.

23                   **MR. PETER WARDLE:** And project director in July of 2019?

24                   **MR. MATTHEW SLADE:** Correct.

25                   **MR. PETER WARDLE:** And you were there, as I think you told my  
26 friend, right through the critical stages of the project?

27                   **MR. MATTHEW SLADE:** In that time period, yes.

28                   **MR. PETER WARDLE:** And you are familiar with the project



1 agreement, correct?

2 **MR. MATTHEW SLADE:** Correct.

3 **MR. PETER WARDLE:** And I just want to review very quickly  
4 some key concepts with you to start. So, first of all, RTG and OLRTC, through the  
5 dropdown construction contract, have responsibility for design and construction of the  
6 project, correct?

7 **MR. MATTHEW SLADE:** Yes.

8 **MR. PETER WARDLE:** And the schedule was OLRTC's obligation,  
9 correct?

10 **MR. MATTHEW SLADE:** Yes.

11 **MR. PETER WARDLE:** The customer, that is the City, or the  
12 owner, had no ability to direct OLRTC to make changes to its schedule, fair?

13 **MR. MATTHEW SLADE:** Yes.

14 **MR. PETER WARDLE:** And, in addition, the City had no ability to  
15 direct OLRTC to make changes to its means and methods of carrying out the work,  
16 correct?

17 **MR. MATTHEW SLADE:** Correct.

18 **MR. PETER WARDLE:** And the project agreement gave, and I  
19 know you don't have it in front of you and it's a big document, but it gave RTG  
20 responsibility for systems integration. Do you recall that?

21 **MR. MATTHEW SLADE:** I believe so, yes.

22 **MR. PETER WARDLE:** And substantial completion was a defined  
23 milestone in the project agreement?

24 **MR. MATTHEW SLADE:** Yes.

25 **MR. PETER WARDLE:** And there were criteria, and again, I am  
26 not going to take you to them in the interest of time, but there were criteria that RTG had  
27 to meet to obtain or achieve substantial completion, both for the track, the infrastructure,  
28 and the vehicles, correct?

1                   **MR. MATTHEW SLADE:** Yes.

2                   **MR. PETER WARDLE:** And there were specific requirements set  
3 out in a commissioning schedule, correct?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MR. PETER WARDLE:** Is it fair to say that RTG and its  
6 subcontractor, OLRTC, had to make a professional assessment as to whether RTG  
7 could meet the requirements of substantial completion?

8                   **MR. MATTHEW SLADE:** Sorry, could you ask that again?

9                   **MR. PETER WARDLE:** I will. I will ask it a little more slowly.

10                  **MR. MATTHEW SLADE:** Thank you.

11                  **MR. PETER WARDLE:** Is it fair to say that RTG and OLRTC had  
12 to make a professional assessment as to whether RTG could meet the requirements of  
13 substantial completion?

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MR. PETER WARDLE:** And to put it another way, it would be  
16 inappropriate to apply for substantial completion if RTG did not believe it had met the  
17 criteria; is that fair?

18                  **MR. MATTHEW SLADE:** Yes.

19                  **MR. PETER WARDLE:** And following substantial completion, and I  
20 know I am doing some very basic stuff here, but the next milestone for RTG was  
21 revenue service availability, correct?

22                  **MR. MATTHEW SLADE:** Yes.

23                  **MR. PETER WARDLE:** And there were a series of -- and you may  
24 not remember this, but there were seven conditions. Do you recall that?

25                  **MR. MATTHEW SLADE:** I do.

26                  **MR. PETER WARDLE:** And that included compliance with the  
27 testing and commissioning requirements of the project agreement, correct?

28                  **MR. MATTHEW SLADE:** Correct.

1                   **MR. PETER WARDLE:** And one of those was trial running, right?

2                   **MR. MATTHEW SLADE:** Correct.

3                   **MR. PETER WARDLE:** And it is not the City's obligation to pass  
4 trial running, correct, it is OLRTC's obligation?

5                   **MR. MATTHEW SLADE:** Everyone involved was obligated to  
6 pass.

7                   **MR. PETER WARDLE:** Well, but the obligation under the project  
8 agreement, is it not fair to say, that it is RTG, and then of course this drops down to  
9 OLRTC, that has to satisfy the criteria for trial run?

10                  **MR. MATTHEW SLADE:** Yes.

11                  **MR. PETER WARDLE:** And then at the end of the process, RTG  
12 and OLRTC advise the City that they have met the requirements of revenue service  
13 availability, correct?

14                  **MR. MATTHEW SLADE:** Correct.

15                  **MR. PETER WARDLE:** The City provides its own opinion, correct?

16                  **MR. MATTHEW SLADE:** Yes.

17                  **MR. PETER WARDLE:** And ultimately, the independent certifier  
18 provides a certificate of RSA if she determines that the conditions have been satisfied,  
19 correct?

20                  **MR. MATTHEW SLADE:** Yes.

21                  **MR. PETER WARDLE:** And the very phrase "revenue service  
22 availability" means that the system is ready for passenger service; correct?

23                  **MR. MATTHEW SLADE:** Yes.

24                  **MR. PETER WARDLE:** In fact, what it means is that it's safe and  
25 fit for its intended use; fair?

26                  **MR. MATTHEW SLADE:** Yes.

27                  **MR. PETER WARDLE:** There's nothing in the project agreement  
28 that suggests that the City had some obligation to conduct its own testing of the system

1 after it was handed over by RTG; correct?

2 **MR. MATTHEW SLADE:** Correct.

3 **MR. PETER WARDLE:** I just want to talk for a minute about  
4 political and financial pressure. Now you've been involved in a number of projects, Mr.  
5 Slade; correct?

6 **MR. MATTHEW SLADE:** I have.

7 **MR. PETER WARDLE:** Okay. And isn't it the case that there's  
8 often pressure to open?

9 **MR. MATTHEW SLADE:** Yes.

10 **MR. PETER WARDLE:** And in this case, you said, "Everyone  
11 wanted to get it finished. To get it finished, it was in no one's interest to delay it at all."  
12 Do you recall saying that?

13 **MR. MATTHEW SLADE:** Yes.

14 **MR. PETER WARDLE:** And that's particularly the case, I'm going  
15 to suggest to you, when a project has been delayed; fair?

16 **MR. MATTHEW SLADE:** Fair.

17 **MR. PETER WARDLE:** And you're familiar with the Crossrail  
18 project that I understand you worked on?

19 **MR. MATTHEW SLADE:** I did.

20 **MR. PETER WARDLE:** And there were delays with that project,  
21 significant delays; correct?

22 **MR. MATTHEW SLADE:** Correct.

23 **MR. PETER WARDLE:** And do you recall that the owner on that  
24 project, Transport for London, was unhappy with the delays?

25 **MR. MATTHEW SLADE:** Yes.

26 **MR. PETER WARDLE:** Just like the owner in this case was  
27 unhappy; correct?

28 **MR. MATTHEW SLADE:** Yes.

1                   **MR. PETER WARDLE:** And just like in this case, in Crossrail,  
2 there was significant media attention and criticism?

3                   **MR. MATTHEW SLADE:** I believe so.

4                   **MR. PETER WARDLE:** And I'm going to suggest that it's not  
5 uncommon to have that kind of pressure on these large infrastructure projects, and it's  
6 simply a pressure the team has to deal with; is that fair?

7                   **MR. MATTHEW SLADE:** Sorry, can you say that again?

8                   **MR. PETER WARDLE:** I'm going to suggest it's not uncommon to  
9 have that kind of pressure on these large projects, and it's simply a pressure the team  
10 has to deal with?

11                  **MR. MATTHEW SLADE:** Okay. Yes.

12                  **MR. PETER WARDLE:** And similarly, when the project is behind,  
13 there can be financial pressure on the contractor; fair?

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MR. PETER WARDLE:** And your obligation as project director was  
16 to act in a professional manner and not cut corners; correct, Mr. Slade?

17                  **MR. MATTHEW SLADE:** Correct.

18                  **MR. PETER WARDLE:** And you didn't cut any corners on this  
19 project; fair?

20                  **MR. MATTHEW SLADE:** Fair.

21                  **MR. PETER WARDLE:** And you certainly never told the City of  
22 Ottawa that OLRTC was cutting corners; correct?

23                  **MR. MATTHEW SLADE:** Definitely not.

24                  **MR. PETER WARDLE:** I want to talk a little bit about some of the  
25 delays and your evidence about soft launch. And first of all, I think we heard already  
26 that you first became involved in the project in late 2017; is that correct?

27                  **MR. MATTHEW SLADE:** Yes.

28                  **MR. PETER WARDLE:** And at the time you became involved, I'm

1 going to suggest that RTG had just advised the City that it was going to meet the initial  
2 RSA date of May 2018; do you recall that?

3 **MR. MATTHEW SLADE:** Quite possibly. I mean, I can't recall  
4 specifically what they'd said on when I'd started to get involved, but I believe that's  
5 probably the case ---

6 **MR. PETER WARDLE:** And I'm not going to take you to the  
7 specific letter, this would have been ---

8 **MR. MATTHEW SLADE:** Okay.

9 **MR. PETER WARDLE:** --- a letter written in November 2017, and  
10 just so we have it on the record, it's COW0523285, and it wasn't written by you. It was  
11 written by one of your predecessors?

12 **MR. MATTHEW SLADE:** Yes, because I wasn't involved -- I wasn't  
13 on the project at that time.

14 **MR. PETER WARDLE:** Okay. And in February 2018, RTG notified  
15 the City that it was not going to be able to meet that date and proposed a new date of  
16 November 2, 2018; do you recall that?

17 **MR. MATTHEW SLADE:** Yes.

18 **MR. PETER WARDLE:** And in fact, and I don't need to take you  
19 through all the chronology because we've covered it with other witnesses, but that date  
20 was never met; correct?

21 **MR. MATTHEW SLADE:** Which date? The November date?

22 **MR. PETER WARDLE:** The November date, that date ---

23 **MR. MATTHEW SLADE:** Yeah.

24 **MR. PETER WARDLE:** --- was not met?

25 **MR. MATTHEW SLADE:** Correct.

26 **MR. PETER WARDLE:** And there were a series of other dates  
27 proposed in 2019, and those dates were not met either; correct?

28 **MR. MATTHEW SLADE:** Correct.

1                   **MR. PETER WARDLE:** And as we know, RSA was not met until  
2 late August of 2019; correct?

3                   **MR. MATTHEW SLADE:** Correct.

4                   **MR. PETER WARDLE:** Isn't it the case by -- that by the time you  
5 became involved in the project, the City was developing major concerns about the  
6 schedules it was receiving information about, and had brought in its own team of  
7 experts to review the schedule?

8                   **MR. MATTHEW SLADE:** I don't know.

9                   **MR. PETER WARDLE:** Do you recall that there was a group of  
10 experts that Mr. Manconi brought in in 2018, which he called the independent  
11 assessment team?

12                  **MR. MATTHEW SLADE:** Yes.

13                  **MR. PETER WARDLE:** Okay. And isn't it fair, Mr. Slade, that the  
14 purpose of bringing those folks in was to review and analyze the schedules that the City  
15 was receiving updates on from OLRTC and RTG?

16                  **MR. MATTHEW SLADE:** I think that was part of their remit. I  
17 wasn't aware it was their sole remit.

18                  **MR. PETER WARDLE:** Okay. And isn't it the case that over a  
19 series of assessments, the independent assessment team concluded that OLRTC's  
20 schedules were too optimistic?

21                  **MR. MATTHEW SLADE:** I don't know.

22                  **MR. PETER WARDLE:** Well, weren't you present at meetings with  
23 members of the independent assessment team during 2018, you and Mr. Lauch and  
24 others?

25                  **MR. MATTHEW SLADE:** I did attend meetings with the  
26 independent assessment team, yes.

27                  **MR. PETER WARDLE:** And don't you recall that at those meetings  
28 the members of that team expressed skepticism about the schedules that were being

1 provided by your side?

2 **MR. MATTHEW SLADE:** Yes.

3 **MR. PETER WARDLE:** And I'm going to suggest to you that that's  
4 the context for the first discussions you had with Mr. Manconi about a soft launch or a  
5 partial opening, that there had been schedules proposed by OLRTC, and OLRTC had  
6 consistently fallen behind those schedules. Do you agree with that or disagree, Mr.  
7 Slade?

8 **MR. MATTHEW SLADE:** I think that's fair.

9 **MR. PETER WARDLE:** Okay. And I'm not trying to be difficult  
10 here, but you and the RTG folks, and perhaps we should just focus on OLRTC, you  
11 didn't have experience in running a rapid bus system; fair?

12 **MR. MATTHEW SLADE:** Fair. Well, I certainly didn't. I don't know  
13 whether any of my colleagues did.

14 **MR. PETER WARDLE:** And Mr. Manconi and his scheduling staff  
15 did have such experience; correct?

16 **MR. MATTHEW SLADE:** I assume so.

17 **MR. PETER WARDLE:** Okay. And the proposal you made initially,  
18 I'm going to suggest, according to the evidence you provided by way of your written  
19 statement was that you raised in the late spring or early summer of 2018, a partial  
20 opening of the system in the east end from Blair to the University of Ottawa. Do you  
21 recall saying that in your interview?

22 **MR. MATTHEW SLADE:** Yes.

23 **MR. PETER WARDLE:** And that was going to be six trains on a  
24 loop between Blair and the University of Ottawa to get the system running and open, to  
25 get the public familiar with it. Do you recall saying that?

26 **MR. MATTHEW SLADE:** I don't remember those precise words,  
27 but it sounds right.

28 **MR. PETER WARDLE:** Okay. And isn't it the case that running a



1 partial system in a loop between Blair and the University of Ottawa was not going to  
2 assist people from the east end in getting to downtown Ottawa for work?

3 **MR. MATTHEW SLADE:** Sorry, I'm not sure I understand.

4 **MR. PETER WARDLE:** I'm suggesting to you that running a partial  
5 system, as you suggested, in a loop between Blair and the University of Ottawa was not  
6 going to assist people from the east end of Ottawa in getting downtown for work.

7 **MR. MATTHEW SLADE:** I can't comment. I couldn't possibly  
8 know the answer to that.

9 **MR. PETER WARDLE:** Well, that's exactly what I'm suggesting,  
10 you didn't know the answer to that because you weren't an expert in that field. That's  
11 not your field of expertise; right?

12 **MR. MATTHEW SLADE:** No, I can't answer that because I don't  
13 live in the east -- I don't know -- sorry, I -- okay. I don't understand what you're ---

14 **MR. PETER WARDLE:** And didn't Mr. Manconi explain to you that  
15 it would require multiple transfers for passengers to go from a bus system out in the  
16 east end, running on an LRT system in a partial loop, and then having to go to another  
17 bus to get downtown; right?

18 **MR. MATTHEW SLADE:** That's what he said.

19 **MR. PETER WARDLE:** Right. And the bus schedule had already  
20 been highly disruptive because of the construction that had gone on over the previous  
21 four or five years; isn't that fair?

22 **MR. MATTHEW SLADE:** I believe so.

23 **MR. PETER WARDLE:** So isn't it the case that Mr. Manconi  
24 turned you down for those reasons?

25 **MR. MATTHEW SLADE:** I think that's what he stated, yes.

26 **MR. PETER WARDLE:** And I'm going to suggest that there was  
27 then another discussion and that was round September of 2018; and the reason I'm  
28 suggesting that date is because we have some documents that deal with that. And,

1 again, this would be you, I'm going to suggest, and probably Mr. Lauch; is that fair?

2 **MR. MATTHEW SLADE:** Possibly.

3 **MR. PETER WARDLE:** And in September 2018 it was becoming  
4 clear that OLRTC wasn't going to meet the November 2018 date; correct?

5 **MR. MATTHEW SLADE:** Correct.

6 **MR. PETER WARDLE:** And one of the underground stations,  
7 Rideau, was nowhere near completion; correct?

8 **MR. MATTHEW SLADE:** Correct.

9 **MR. PETER WARDLE:** You didn't have anywhere near all the  
10 vehicles manufactured or through testing and commissioning; isn't that the case, in  
11 September 2018?

12 **MR. MATTHEW SLADE:** Correct.

13 **MR. PETER WARDLE:** And what you and Mr. Lauch proposed to  
14 Mr. Manconi, was a partial opening involving a modified fleet size, partial station  
15 openings and reducing the requirements of trial running; do you recall that?

16 **MR. MATTHEW SLADE:** Vaguely, yes.

17 **MR. PETER WARDLE:** So I'm going to suggest that this wasn't  
18 being done out of some suggestion on your side that the City needed a partial opening  
19 or soft launch to test the system, it was being done because RTG and OLRTC were  
20 behind and they were trying to revise and reduce the scope of work; isn't that right?

21 **MR. MATTHEW SLADE:** No.

22 **MR. PETER WARDLE:** But in any event, isn't it the case that the  
23 City again said "No" and essentially for the same reasons, the City didn't want to put  
24 additional stress on its passengers?

25 **MR. MATTHEW SLADE:** That's what they stated.

26 **MR. PETER WARDLE:** And the City took the position that it was  
27 entitled to insist on the bargain that had been struck in the project agreement; isn't that  
28 fair?

1                   **MR. MATTHEW SLADE:** That's fair.

2                   **MR. PETER WARDLE:** Let's talk for a moment, if we can, about  
3 substantial completion. And I'm just going to take you through a little bit of the  
4 chronology, Mr. Slade. So this project, as we heard I think a little bit about this morning,  
5 RTG first applied for substantial completion in May of 2019?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MR. PETER WARDLE:** And by that time RTG was almost a year  
8 behind schedule; correct?

9                   **MR. MATTHEW SLADE:** Yes.

10                  **MR. PETER WARDLE:** And the City did not give a positive  
11 opinion that substantial completion had been achieved; fair?

12                  **MR. MATTHEW SLADE:** Fair.

13                  **MR. PETER WARDLE:** In fact there's a lengthy letter, and we can  
14 turn it up if you like, but there's a lengthy letter from Mr. Morgan setting out the City's  
15 position and all the items that remained to be completed. Do you recall that letter?

16                  **MR. MATTHEW SLADE:** I do.

17                  **MR. PETER WARDLE:** And it's also correct, isn't it, that the  
18 independent certifier agreed with the City's position and she had her own reasons for  
19 rejecting RTG's application for substantial completion?

20                  **MR. MATTHEW SLADE:** Yes.

21                  **MR. PETER WARDLE:** And the result of the City taking that  
22 position and the independent certifier agreeing, was that substantial completion was  
23 delayed from May until July 26<sup>th</sup> or 27<sup>th</sup>, 2019; correct?

24                  **MR. MATTHEW SLADE:** Yes.

25                  **MR. PETER WARDLE:** So is it fair to say that regardless of  
26 political pressure, the City staff working on this project were doing their best to make  
27 sure that RTG met the requirements of substantial completion?

28                  **MR. MATTHEW SLADE:** Yes.

1                   **MR. PETER WARDLE:** And if that meant a further two month  
2 delay, as it did in this case, the City was prepared to live with that delay; is that not fair?

3                   **MR. MATTHEW SLADE:** Yes.

4                   And ultimately as we know, RTG applied for substantial completion  
5 a second time and you would have been involved in that because of the drop-down  
6 obligations; correct?

7                   **MR. MATTHEW SLADE:** Yes.

8                   **MR. PETER WARDLE:** And, again, you and your team reached a  
9 professional judgment that RTG and OLRTC had met the requirements of the project  
10 agreement with respect to substantial completion; correct?

11                  **MR. MATTHEW SLADE:** Correct.

12                  **MR. PETER WARDLE:** And now at this point, late July, the City  
13 was satisfied that you had met the requirements; correct?

14                  **MR. MATTHEW SLADE:** Yes.

15                  **MR. PETER WARDLE:** And the independent certifier now agreed;  
16 correct?

17                  **MR. MATTHEW SLADE:** Correct.

18                  **MR. PETER WARDLE:** And there's a substantial completion  
19 agreement, and maybe we can just turn that up for a moment, it is RTG00332043.0002,  
20 if I have it right.

21                         And I believe – we can go to the end of this document, but either  
22 you signed this document or in any event – sorry – to the signature line.

23                  **MR. MATTHEW SLADE:** This is the term sheet; right?

24                  **MR. PETER WARDLE:** This is the substantial completion  
25 agreement.

26                  **MR. MATTHEW SLADE:** No, it's not; this is the term sheet.

27                  **MR. PETER WARDLE:** I think if we go back up, Mr. Slade, we'll  
28 see – let's go to the top. Oh, I'm sorry, we have the wrong document. Give me one

1 second and I'll find the right document.

2 (SHORT PAUSE)

3 MR. PETER WARDLE: Can I just ask – we'll put up the document  
4 number again, because the document number I have for the substantial completion  
5 agreement is RTG00332043.002.

6 --- EXHIBIT No. 143:

7 RTG00332043.0002 – Substantial Completion Agreement

8 COMMISSIONER HOURIGAN: Stand by, please.

9 MR. PETER WARDLE: So, Mr. Slade, if we turn down to the  
10 bottom of this document, to the signature lines, it doesn't appear that you signed it, but  
11 you would be familiar with this document; correct?

12 MR. MATTHEW SLADE: I'm familiar with it and I did not sign it.

13 MR. PETER WARDLE: So if we go back to the front page of the  
14 document, I'm going to suggest to you that if we go to the reference to "deferred works"  
15 in the preamble; do you see the work described in Schedule "A" defined as "deferred  
16 works"?

17 MR. MATTHEW SLADE: Yes.

18 MR. PETER WARDLE: And if we go to Schedule "A" to the  
19 documents, which is three or four pages down, and I'll just scroll through it quickly so  
20 you can see the topics. We're not going to spend a great deal of time on this, but you'll  
21 see "vehicle cab doors". Go over to the next page you'll see the "platform edge  
22 cameras". If we could scroll down, please. "Passenger information systems" and then  
23 over on the last page there's a reference to "elevator and escalator licences"; do you  
24 see that?

25 MR. MATTHEW SLADE: I do.

26 MR. PETER WARDLE: And I'm going to suggest that there were  
27 certain works, including the vehicle cab doors, the platform edge cameras, the  
28 passenger information system and the elevators, and the plan was for these to be either

1 addressed or mitigated by the time of revenue service was for these to be either  
2 addressed or mitigated by the time of revenue service availability?

3 **MR. MATTHEW SLADE:** Yes.

4 **MR. PETER WARDLE:** And if -- I'm going to suggest that if that  
5 happened and those works were satisfactorily addressed or mitigated before revenue  
6 service availability, it would not affect the safety of the system; correct?

7 **MR. MATTHEW SLADE:** Correct.

8 **MR. PETER WARDLE:** And nor would it affect the use or  
9 enjoyment of the system by the public; fair?

10 **MR. MATTHEW SLADE:** Fair.

11 **MR. PETER WARDLE:** And could we describe this as a situation  
12 where the parties were actually working collaboratively to categorize the deferred works  
13 and deal with them in a responsible fashion?

14 **MR. MATTHEW SLADE:** Yes.

15 **MR. PETER WARDLE:** And then I'm going to suggest to you, and  
16 I won't take it up -- I won't take you to it, but by the time of RTG's letter that sets out its  
17 revenue service availability notice on August the 30<sup>th</sup>, it indicates in that letter that those  
18 -- that these issues, the deferred works, have been either resolved or mitigated.

19 **MR. MATTHEW SLADE:** Okay.

20 **MR. PETER WARDLE:** Okay. Let's just move, then -- we'll take  
21 this document down. And I think you've already indicated to my friend that the very next  
22 step under the project agreement in obtaining revenue service availability after  
23 substantial completion was trial running; correct?

24 **MR. MATTHEW SLADE:** Yes.

25 **MR. PETER WARDLE:** And you advised the City that it was your  
26 intention to start trial running as soon as you got substantial completion.

27 **MR. MATTHEW SLADE:** Yes.

28 **MR. PETER WARDLE:** And again, OLRTC had to make its own

1 professional assessment as to whether it was ready for trial running; is that fair?

2 **MR. MATTHEW SLADE:** Yes.

3 **MR. PETER WARDLE:** And you said in your evidence, and I think  
4 you repeated it to my friend today:

5 "...on paper yes, on the basis that all the systems had  
6 passed all necessary tests and the vehicles were all  
7 tested and passed all the necessary tests..."

8 That's what you said in your interview; correct?

9 **MR. MATTHEW SLADE:** Correct.

10 **MR. PETER WARDLE:** And then you did indicate that:

11 "...their reliability was probably quite a way short of  
12 where we were hoping that they would be at that  
13 point."

14 Right?

15 **MR. MATTHEW SLADE:** Yes.

16 **MR. PETER WARDLE:** And ---

17 **MR. MATTHEW SLADE:** Thinking about the vehicles.

18 **MR. PETER WARDLE:** Yeah. And isn't it also fair, though, that  
19 reliability was improving, and you expected that it would continue to improve?

20 **MR. MATTHEW SLADE:** That was an expectation, yes.

21 **MR. PETER WARDLE:** And at the time of substantial completion,  
22 and when you start trial running, there was nothing in writing from OLRTC to the City  
23 stating that there were any issues with the reliability of the vehicles; correct?

24 **MR. MATTHEW SLADE:** I don't recall.

25 **MR. PETER WARDLE:** And it's fair to say, isn't it, that nobody on  
26 your team wanted to cut corners in connection with trial running?

27 **MR. MATTHEW SLADE:** Yes.

28 **MR. PETER WARDLE:** I'm going to, again, just quote from your

1 evidence in your interview:

2 "There was, you know, an alignment that the sooner  
3 we had it done the better for everybody's sake, but  
4 not at any cost. We weren't cutting any corners or  
5 doing anything unsafe, or that wasn't agreed to or  
6 acceptable."

7 Is that what you said during your interview?

8 **MR. MATTHEW SLADE:** Yes

9 **MR. PETER WARDLE:** And that remains your evidence today, sir;  
10 correct?

11 **COMMISSIONER HOURIGAN:** You have to say, "Yes".

12 **MR. PETER WARDLE:** You have to say, "Yes".

13 **COMMISSIONER HOURIGAN:** Yes, sorry, Mr. Wardle.

14 You have to say "Yes" or "No"; you can't just nod your head.

15 **MR. MATTHEW SLADE:** Sorry.

16 **COMMISSIONER HOURIGAN:** We need to have it for the record.

17 **MR. MATTHEW SLADE:** Sorry.

18 **COMMISSIONER HOURIGAN:** Okay?

19 **MR. PETER WARDLE:** And readiness or maintenance was also  
20 an obligation of OLRTC and its subcontractor, RTM; correct?

21 **MR. MATTHEW SLADE:** RTM is not a subcontractor of OLRTC.  
22 RTM is subcontractor of RTG.

23 **MR. PETER WARDLE:** That's fair enough, but readiness for  
24 maintenance was actually an obligation of RTG under the project agreement, right?

25 **MR. MATTHEW SLADE:** Yes.

26 **MR. PETER WARDLE:** Okay. And as you said this morning, RTG  
27 and its subcontractors had a 30-year maintenance obligation under the project  
28 agreement.



1                   **MR. MATTHEW SLADE:** Yes.

2                   **MR. PETER WARDLE:** And the project agreement provided for  
3 payment on performance; correct?

4                   **MR. MATTHEW SLADE:** I believe so.

5                   **MR. PETER WARDLE:** So RTG and its contractors had to  
6 determine whether they were ready to take on the maintenance function, and if they  
7 weren't, they shouldn't have moved forward with RSA; isn't that right?

8                   **MR. MATTHEW SLADE:** Sorry; can you say that again?

9                   **MR. PETER WARDLE:** RTG and its contractors had to determine  
10 whether they were ready to take on the maintenance function, and if they weren't, they  
11 shouldn't have moved forward with RSA; isn't that fair?

12                  **MR. MATTHEW SLADE:** Yes.

13                  **MR. PETER WARDLE:** I just want to deal quickly with the RAMP  
14 process. And some of this has been covered already so I'll go through it quickly. It was  
15 actually called the Readiness Activation Management Plan; I don't know if you  
16 remember that terminology?

17                  **MR. MATTHEW SLADE:** I don't.

18                  **MR. PETER WARDLE:** But it was a series of meetings involving  
19 senior staff on the project.

20                  **MR. MATTHEW SLADE:** Yes.

21                  **MR. PETER WARDLE:** And you and Mr. Lauch attended, and  
22 other people from OLRTC?

23                  **MR. MATTHEW SLADE:** Yes.

24                  **MR. PETER WARDLE:** They were initially monthly, then weekly,  
25 then on an *ad hoc* basis and probably almost daily towards the end?

26                  **MR. MATTHEW SLADE:** That's how I recall, yes.

27                  **MR. PETER WARDLE:** Okay. And 20 or 30 people in the room, is  
28 what you recall?

1                   **MR. MATTHEW SLADE:** Yes.

2                   **MR. PETER WARDLE:** Reporting on readiness, on -- and, again,  
3 my friend took you to some of this, on red, yellow, green on a long list of things that  
4 needed to be done.

5                   **MR. MATTHEW SLADE:** Yes.

6                   **MR. PETER WARDLE:** And the City would present, and then your  
7 side, and, on occasion, Alstom and Thales?

8                   **MR. MATTHEW SLADE:** Sorry; what's the question? Sorry.

9                   **MR. PETER WARDLE:** Sorry. The City would present at these  
10 meetings, your side would present at these meetings?

11                  **MR. MATTHEW SLADE:** We would -- yes. It was led by the City,  
12 and we were participants.

13                  **MR. PETER WARDLE:** Okay. And Alstom and Thales were  
14 invited to the RAMP meetings occasionally; correct?

15                  **MR. MATTHEW SLADE:** Occasionally when they needed to be,  
16 yes.

17                  **MR. PETER WARDLE:** Okay. And it covered everything from  
18 training, media, testing, commissioning, vehicle performance, and maintenance.

19                  **MR. MATTHEW SLADE:** Yes.

20                  **MR. PETER WARDLE:** Everything with regard to being ready for  
21 revenue service; correct?

22                  **MR. MATTHEW SLADE:** Yes.

23                  **MR. PETER WARDLE:** And you did tell my friend this morning that  
24 the City had a huge thirst for knowledge; correct?

25                  **MR. MATTHEW SLADE:** Yes.

26                  **MR. PETER WARDLE:** You thought there was a lack of trust?

27                  **MR. MATTHEW SLADE:** That's what I felt.

28                  **MR. PETER WARDLE:** And is it fair to say that the City was

1 somewhat sceptical about RTG's and OLRTC's promises, given all the issues that had  
2 arisen over the previous year and a half?

3 **MR. MATTHEW SLADE:** You'd have to ask the City that, but I  
4 suspect so.

5 **MR. PETER WARDLE:** Okay. And is it also fair to say that the  
6 City was scrutinizing OLRTC fairly carefully in the period around substantial completion  
7 and trial running?

8 **MR. MATTHEW SLADE:** In what regard? Sorry.

9 **MR. PETER WARDLE:** Well, put it this way, you didn't want to cut  
10 corners and the City didn't want you to cut any corners; isn't that fair?

11 **MR. MATTHEW SLADE:** Yes.

12 **MR. PETER WARDLE:** The trial running test team. So again,  
13 we've already covered this a little bit, I'll go through it quickly, but there was a team that  
14 had representatives of OLRTC, City, its consultants, and the independent certifier, and  
15 there were daily meetings.

16 **MR. MATTHEW SLADE:** Yes.

17 **MR. PETER WARDLE:** Correct?

18 **MR. MATTHEW SLADE:** Yes.

19 **MR. PETER WARDLE:** And you said in your Commission  
20 interview, that there were no unilateral decisions; correct?

21 **MR. MATTHEW SLADE:** Correct.

22 **MR. PETER WARDLE:** And the idea was that the group would  
23 review the data on a daily basis, but would apply its collective professional judgment to  
24 determine whether any particular day should be a pass?

25 **MR. MATTHEW SLADE:** Yes.

26 **MR. PETER WARDLE:** Senior management was told whether  
27 there was a pass or a fail but didn't actually get access to the data; correct?

28 **MR. MATTHEW SLADE:** Certainly on my side, yes

1                   **MR. PETER WARDLE:** Okay.

2                   **MR. PETER WARDLE:** And you weren't asked this this morning,  
3 but in your interview, I just want to make sure we get this right, you said, you thought  
4 the whole:

5                                   "...process was exceedingly good...very well executed  
6                                   and everybody bought into it....I thought it was  
7                                   perfectly fair."

8                   Do you recall saying that?

9                   **MR. MATTHEW SLADE:** Yes.

10                  **MR. PETER WARDLE:** So even though the team failed RTG on a  
11 number of days, particularly those first two or three days at the end of July, you still  
12 agree that the process was a fair process?

13                  **MR. MATTHEW SLADE:** Yes.

14                  **MR. PETER WARDLE:** And when the day was close, the team  
15 would come together to understand specifically what went wrong; is that fair?

16                  **MR. MATTHEW SLADE:** Yes.

17                  **MR. PETER WARDLE:** And then a determination would be made  
18 by the team as to whether or not the day would be a pass or fail?

19                  **MR. MATTHEW SLADE:** Yes.

20                  **MR. PETER WARDLE:** And just on maintenance practices, there  
21 were a number of failures during the trial running period, correct?

22                  **MR. MATTHEW SLADE:** Yes.

23                  **MR. PETER WARDLE:** And some of this, as you described to my  
24 friend, was a paperwork issue?

25                  **MR. MATTHEW SLADE:** Some of it, yes.

26                  **MR. PETER WARDLE:** And the City had concerns, is it not fair,  
27 about whether RTM was sufficiently staffed for the maintenance period?

28                  **MR. MATTHEW SLADE:** Yes, I think that's fair. I don't think that

1 was necessarily discussed during the trial running review team meetings, but it was a  
2 conversation that -- I think it was probably held in the RAMP meetings or elsewhere, but  
3 it wasn't necessarily part of those trial running meetings.

4 **MR. PETER WARDLE:** And I will just take you very quickly to  
5 COW 0468165. And you will see, if we scroll down, and I appreciate this is not your  
6 letter. I believe Mr. Lauch signs this letter, if we go over, you'll see it is Mr. Lauch who  
7 signs it, but you are copied. Do you see that?

8 **--- EXHIBIT No. 144**

9 COW0468165 – Letter – RTM Readiness and OLRTC

10 Warranty Support – 24 July 2019

11 **MR. MATTHEW SLADE:** Yes.

12 **MR. PETER WARDLE:** If we go back to the first page, you will see  
13 the subject is RTM readiness and OLRTC warranty report, and if we scroll down a little  
14 bit, you will see there has been a readiness meeting and Mr. Lauch says,

15 “It is incumbent on RTG to provide and sustain ample  
16 resources to support our trial running efforts, and it is logical  
17 that RTG maintain augmented support for a sufficient period,  
18 minimum one month post passenger service, to ensure that  
19 post RSA through the commencement of passenger service  
20 is redundantly supported as we ramp up and enhance our  
21 support systems as a function of real-time experience.”

22 Do you see that?

23 **MR. MATTHEW SLADE:** I do.

24 **MR. PETER WARDLE:** Okay. So, I'm going to suggest — we can  
25 take the document down — that the City had raised concerns about staffing on the  
26 maintenance side and that RTG was providing some assurances that those issues  
27 would be resolved.

28 **MR. MATTHEW SLADE:** Yes.

1                   **MR. PETER WARDLE:** The trial running criteria, you told us this  
2 morning that the final AVKR criteria of 98 per cent that is found in the trial running test  
3 procedure document, that the metrics were probably higher than you would normally  
4 have. Do you recall saying that?

5                   **MR. MATTHEW SLADE:** I don't, but I don't dispute I said it.

6                   **MR. PETER WARDLE:** And that it was intended to reflect the  
7 regime in the payment mechanism for the period after revenue service, correct?

8                   **MR. MATTHEW SLADE:** It reflects -- yes.

9                   **MR. PETER WARDLE:** Okay. And it is correct that during trial  
10 running OLRTC had difficulty meeting that higher criteria, the 98 per cent, correct?

11                   **MR. MATTHEW SLADE:** Yes.

12                   **MR. PETER WARDLE:** And I'm going to suggest to you, sir, that it  
13 was RTG, and specifically Mr. Lauch, that suggested to the City returning to the 2017  
14 criteria of 96 per cent, 9 out of 12 days.

15                   **MR. MATTHEW SLADE:** Sorry, I don't understand.

16                   **MR. PETER WARDLE:** Okay. I am going to suggest to you that  
17 OLRTC had difficulty meeting the 98 per cent and that it was Mr. Lauch's proposal to  
18 Mr. Manconi to reduce the criteria from 98 per cent to 96 per cent and go back to the  
19 2017 RFI document.

20                   **MR. MATTHEW SLADE:** You would have to ask Mr. Lauch, but  
21 that's not my recollection. That's not what I experienced.

22                   **MR. PETER WARDLE:** Okay. And if I suggested to you, and I  
23 won't take you to it now, that we have a WhatsApp chat message on August 14 that  
24 describes "Meeting to discuss Peter's suggestion," that would be consistent, I am going  
25 to suggest to you, with your recollection of when the decision was made to change from  
26 98 per cent to 96 per cent. In other words, it was around August 14<sup>th</sup>; isn't that fair?

27                   **MR. MATTHEW SLADE:** Yes.

28                   **MR. PETER WARDLE:** And the decision to move from 15 to 13

1 trains, that decision is made by the City, correct?

2 **MR. MATTHEW SLADE:** I believe so.

3 **MR. PETER WARDLE:** Okay. And you thought it was appropriate  
4 because it is the City that would know how many trains they're going to need for  
5 passenger service, correct?

6 **MR. MATTHEW SLADE:** Yes.

7 **MR. PETER WARDLE:** You felt, at the end of the process, that  
8 OLRTC had successfully achieved trial running, correct?

9 **MR. MATTHEW SLADE:** Yes.

10 **MR. PETER WARDLE:** And I am just going to quote you. "We  
11 were, RTG, OLRTC, we went through substantial completion. We went through trial  
12 running. We had the independent safety assessment. The independent certifier said  
13 that, all said, it's ready. It meets the requirements. It's safe." Do you recall saying  
14 that?

15 **MR. MATTHEW SLADE:** Yes.

16 **MR. PETER WARDLE:** And you've already told my friend that  
17 there was no vetting in period required for the Alstom vehicles under the project  
18 agreement?

19 **MR. MATTHEW SLADE:** I said there was no burn-in requirement  
20 for the vehicles under the project agreement.

21 **MR. PETER WARDLE:** Sorry, that's ---

22 **MR. MATTHEW SLADE:** Vetting in is a different thing. But burn-  
23 in, I said there wasn't a requirement.

24 **MR. PETER WARDLE:** But I want to be very clear. No burn-in  
25 period was required for those vehicles under the project agreement, correct?

26 **MR. MATTHEW SLADE:** Yes.

27 **MR. PETER WARDLE:** But, in fact, your testimony was that those  
28 vehicles probably had about a million kilometres on the trains before they went into

1 revenue service?

2 **MR. MATTHEW SLADE:** No, I don't think I said that.

3 **MR. PETER WARDLE:** Okay.

4 **MR. MATTHEW SLADE:** They had about 10,000 kilometres on  
5 probably each car or an average of about 10,000 across 34 cars.

6 **MR. PETER WARDLE:** Okay, 10,000 a car?

7 **MR. MATTHEW SLADE:** Yes.

8 **MR. PETER WARDLE:** And you didn't have any concerns about  
9 the burn-in period for the vehicles going into revenue service availability, correct?

10 **MR. MATTHEW SLADE:** Correct.

11 **MR. PETER WARDLE:** Okay. I just want to, before I finish off,  
12 deal with the question of the opening. And I don't want to spend a lot of time on this,  
13 but I think what you suggested in your evidence was that you understood that the --  
14 from a letter from Mr. Morgan, that the system was going to open to the public in Q4 of  
15 2019, right?

16 **MR. MATTHEW SLADE:** I think the letter said early Q4 2019, yes.

17 **MR. PETER WARDLE:** Right. And my friend did take you to the  
18 email, and that is RTC 00885419.0001. If we could turn that up again. And when you  
19 look at this email, and, of course, this email is in June, June 24<sup>th</sup>, but as I read the  
20 email, it suggests that the targeted RSA date is August 16, correct?

21 **MR. MATTHEW SLADE:** Yes.

22 **MR. PETER WARDLE:** And the last sentence says,  
23 "Committing..." -- sorry, the two stars.

24 **MR. MATTHEW SLADE:** Yes.

25 **MR. PETER WARDLE:** It says, "Committing to the date is  
26 important for the City as they need to book drivers' schedules by 17 July for the three  
27 weeks of parallel bus/LRT service that will start second week of September." And that  
28 would suggest that there would be three weeks between RSA and launch; correct?



1                   **MR. MATTHEW SLADE:** No. Sorry, I don't agree with that.

2                   **MR. PETER WARDLE:** Okay.

3                   **MR. MATTHEW SLADE:** That's -- there'd still be three weeks of  
4 parallel bus and LRT service. It doesn't mean there's three weeks between launch.

5                   **MR. PETER WARDLE:** Well, sorry, the parallel bus service would  
6 start at launch; wouldn't it?

7                   **MR. MATTHEW SLADE:** Yes.

8                   **MR. PETER WARDLE:** Okay. Let's look at a second document,  
9 sir, RTG00429222.0001.

10                   **--- EXHIBIT No. 145:**

11   RTG00429222.0001 – Minutes RTG Board Meeting No. 33 -  
12   25 July 2019

13                   **MR. PETER WARDLE:** This is a minutes of a board of the RTG  
14 general partnership, and you'll see the date on it is July 25, 2019. And if we go to page  
15 2, under item 2, executive summary, you'll see, the City -- in the second paragraph, sir,  
16 it says, "The City will need three to four weeks after RSA to prepare for public launch."

17                   **MR. MATTHEW SLADE:** Okay.

18                   **MR. PETER WARDLE:** So doesn't that suggest that at least the  
19 RTG board knew that that was the time period?

20                   **MR. MATTHEW SLADE:** They might have done. I'm not ---

21                   **MR. PETER WARDLE:** Okay.

22                   **MR. MATTHEW SLADE:** --- RTG board.

23                   **MR. PETER WARDLE:** I realize you're not the RTG board, sir.

24                   **MR. MATTHEW SLADE:** I don't work for RTG either.

25                   **MR. PETER WARDLE:** I know you don't work for RTG, Mr. Slade.  
26 I'm quite aware of that.

27                   **MR. MATTHEW SLADE:** Okay.

28                   **MR. PETER WARDLE:** You then said in response to a question

1 from my friend this morning, and we can take this question -- we can take this document  
2 down -- you said in response to a question from my friend that you and Mr. Lauch found  
3 out about the public launch date on August 30<sup>th</sup>. Do you recall saying that?

4 **MR. MATTHEW SLADE:** I do.

5 **MR. PETER WARDLE:** Okay. Isn't it a fact, sir, that the date of the  
6 public launch was announced by the mayor on August 23, a week earlier?

7 **MR. MATTHEW SLADE:** Quite possibly. I can't recall. It was in  
8 the media. I mean, it's easy to prove what ---

9 **MR. PETER WARDLE:** Well, in fact, I have it as being a Global  
10 News item on August the 23<sup>rd</sup>.

11 **MR. MATTHEW SLADE:** Okay.

12 **MR. PETER WARDLE:** So it couldn't have come as a big surprise  
13 to you, Mr. Slade, on August the 30<sup>th</sup> that the system was going to be launched on  
14 September 14<sup>th</sup> when the mayor had already announced it a week earlier ---

15 **MR. MATTHEW SLADE:** Correct.

16 **MR. PETER WARDLE:** --- right?

17 **MR. MATTHEW SLADE:** Correct. My statement of the 30<sup>th</sup> is  
18 wrong. I was shocked on the 23<sup>rd</sup>.

19 **MR. PETER WARDLE:** Okay.

20 **MR. MATTHEW SLADE:** If that's the day that that occurred, that's  
21 the day that I was shocked. The fact that I said the 30<sup>th</sup> is incorrect.

22 **MR. PETER WARDLE:** I'm going to suggest to you that aside from  
23 pulling something out of a letter Mr. Morgan wrote, you and Mr. Lauch were always  
24 aware throughout that the City was planning to open the system three to four weeks  
25 after public launch -- sorry, after RSA as these documents that we've just gone through  
26 indicate?

27 **MR. MATTHEW SLADE:** I disagree.

28 **MR. PETER WARDLE:** Let me just finish out quickly with some

1 questions about some of the events that have taken place since the launch of the  
2 system. Can we agree, Mr. Slade, that in that first winter, starting on New Year's Eve  
3 2019, the system experienced catenary failures?

4 **MR. MATTHEW SLADE:** There was an issue that affected the  
5 catenary, but I wouldn't necessarily call it catenary failure.

6 **MR. PETER WARDLE:** There were inductor failures?

7 **MR. MATTHEW SLADE:** Yes.

8 **MR. PETER WARDLE:** There were switch heater failures?

9 **MR. MATTHEW SLADE:** Okay. Yes.

10 **MR. PETER WARDLE:** And in July of 2020, there were cracked  
11 wheels?

12 **MR. MATTHEW SLADE:** Yes.

13 **MR. PETER WARDLE:** None of those things could have been  
14 detected with more trial running; isn't that fair?

15 **MR. MATTHEW SLADE:** Probably.

16 **MR. PETER WARDLE:** There were two derailments in 2021?

17 **MR. MATTHEW SLADE:** Yes.

18 **MR. PETER WARDLE:** The August derailment was a wheel axle  
19 bearing assembly issue?

20 **MR. MATTHEW SLADE:** Yes.

21 **MR. PETER WARDLE:** That wouldn't have been detected by  
22 additional trial running; correct?

23 **MR. MATTHEW SLADE:** Correct.

24 **MR. PETER WARDLE:** The September 2021 derailment was a  
25 result of human error; correct?

26 **MR. MATTHEW SLADE:** Yes.

27 **MR. PETER WARDLE:** That wouldn't have been detected by  
28 additional trial running?

1                   **MR. MATTHEW SLADE:** No.

2                   **MR. PETER WARDLE:** And lastly, can we agree that with respect  
3 to operator preparedness that RTG was responsible for training the trainers?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MR. PETER WARDLE:** And the fact that the system was late  
6 meant that the operators had more time to train and use the simulator; correct?

7                   **MR. MATTHEW SLADE:** Yes.

8                   **MR. PETER WARDLE:** And you commented in your interview on  
9 the concept of a shadow operator; do you recall saying that?

10                  **MR. MATTHEW SLADE:** Yes, I do.

11                  **MR. PETER WARDLE:** And you described it as a seasoned team  
12 of operators in the control room who sit next to the actual operators; fair?

13                  **MR. MATTHEW SLADE:** Yes.

14                  **MR. PETER WARDLE:** But you actually don't know, do you, sir,  
15 what plan OC Transpo had in place with respect to having experienced rail expertise in  
16 the room at the time of launch; do you?

17                  **MR. MATTHEW SLADE:** No.

18                  **MR. PETER WARDLE:** All right. Thank you, Mr. Slade. Those  
19 are all my questions.

20                  **COMMISSIONER HOURIGAN:** All right. Thank you, Counsel.  
21 Next is Alstom.

22                  **MR. MICHAEL VALO:** Good afternoon, Mr. Commissioner.  
23 Michael Valo for Alstom. V-A-L-O.

24                  **--- CROSS-EXAMINATION BY MR. MICHAEL VALO:**

25                  **MR. MICHAEL VALO:** How do you do, Mr. Slade?

26                  **MR. MATTHEW SLADE:** Very well, thank you. How are you?

27                  **MR. MICHAEL VALO:** Well, thank you. I just want to -- was  
28 hoping to finish before lunch, but we may carry over just after, but I'll do my best, sit.

1                   Mr. Slade, your evidence to Commission Counsel in your interview  
2 was that Alstom refused to properly prepare itself for its maintenance obligations. Do  
3 you recall that?

4                   **MR. MATTHEW SLADE:** I don't know if I used those precise  
5 words, but, yes.

6                   **MR. MICHAEL VALO:** To paraphrase, you had said, for example,  
7 that OLRTC regularly invited them out to the field to see how things were done and to  
8 help prepare them; right?

9                   **MR. MATTHEW SLADE:** Yes.

10                  **MR. MICHAEL VALO:** Thank you, sir. Now to be fair, you did  
11 acknowledge in your interview that Alstom's maintenance obligations only actually  
12 started upon RSA; right?

13                  **MR. MATTHEW SLADE:** I believe that's what their contractual  
14 responsibility was, yes.

15                  **MR. MICHAEL VALO:** Right. And that had those obligations  
16 started perhaps six months earlier, that may have been a better arrangement?

17                  **MR. MATTHEW SLADE:** Yes.

18                  **MR. MICHAEL VALO:** In fact, sir, what I'd like to look at first to  
19 start are some emails that I think are going to indicate that your criticisms of Alstom in  
20 this regard are not accurate or correct. If we could pull up COMH25, please?

21                  **--- EXHIBIT No. 146:**

22                                   COMH0000025 – Re: CCTV troubleshooting

23                  **MR. MICHAEL VALO:** If I could have the operator scroll down,  
24 please, so we could start with the first email? This is an email, sir, as you can see, from  
25 Denison Crossley of OLRTC. He's an electrical coordinator for OLRTC, and it's to Eloy  
26 Fernandez of Alstom. And what Mr. Crossley's doing is inviting Alstom maintenance  
27 techs to attend with them to work on some cameras, and this is January 2019. Do you  
28 see that?

1                   **MR. MATTHEW SLADE:** Yes.

2                   **MR. MICHAEL VALO:** And this is prior -- well prior to the start of  
3 revenue service; right?

4                   **MR. MATTHEW SLADE:** Yes.

5                   **MR. MICHAEL VALO:** And if we scroll up, there's a response from  
6 Dean Gorman, and do you know Mr. Gorman was a superintendent in the Alstom  
7 maintenance team?

8                   **MR. MATTHEW SLADE:** I vaguely remember, yes.

9                   **MR. MICHAEL VALO:** Right. And he was actually -- I should have  
10 his title corrected. He was the maintenance rail system manager. And his response is,  
11 to your team, sir, whenever you guys are chasing gremlins out of the system, if you  
12 have time to let us know, I most definitely want to get my team involved. Trystan is the  
13 comm's sig team lead. So, if you can lead him know and he can let you know who and  
14 if we can make it over, we have some other inspections training already scheduled, so  
15 there might be a few times we can't make it." Do you see that, sir?

16                   **MR. MATTHEW SLADE:** I do.

17                   **MR. MICHAEL VALO:** So, you would agree that at least in this  
18 instance, January 2019, nine months prior to the start of revenue service, Alstom's  
19 maintenance rail system manager is accepting offers from OLRTC to get out, get their  
20 hands on the system, and see how it works?

21                   **MR. MATTHEW SLADE:** Yes.

22                   **MR. MICHAEL VALO:** Now, I want to fast forward in time to June  
23 2019. I'm going to ask the court operator to bring up ALS 56191. And what we are  
24 looking at here, sir, as I said, we fast-forwarded to June, middle of June, June 14, 2019,  
25 and this is an internal email, sir, from Dean Gorman, the same manager from earlier.  
26 It's internal to Alstom, though, so you haven't seen this, of course. And what we see  
27 here is Mr. Gorman reporting to Richard France. And do you know Richard France to  
28 be the project manager for the Alstom maintenance team?

1 **--- EXHIBIT No 147:**

2 ALS0056191 – Email Alstom 14 June 2019 Infra – What we  
3 can do

4 **MR. MATTHEW SLADE:** Okay.

5 **MR. MICHAEL VALO:** And what he says under OCS, sir, is -- I'm  
6 looking at the second sentence. I am just fast-forwarding just past --

7 "RTM OLRTC failed to provide us any hands-on training  
8 on the OCS, so we decided to bring our own people to  
9 ensure the power techs were properly taught these  
10 issues. Once our techs get some real hands on, we can  
11 do all the things listed in red."

12 And then under TPSS,

13 "We've asked for almost eight months to shadow  
14 OLRTC's power team to see what they're doing in the  
15 TPSS, that has never happened. Our power techs  
16 received a decent bit of training on the TPSS from  
17 Siemens, but we have had no info from OLRTC on what  
18 the procedures for rack in and out, or anything specific to  
19 the TPSS is being operated. For the TPSS, we can do  
20 the preventative maintenance, but any corrective will  
21 require our techs to create their own procedures."

22 So, again, now we are fast-forwarded in time and you will agree  
23 with me, sir, that the report Mr. Gorman is giving is inconsistent with your recollection ---

24 **MR. MATTHEW SLADE:** Yes.

25 **MR. MICHAEL VALO:** --- to Commission counsel?

26 **MR. MATTHEW SLADE:** Yes.

27 **MR. MICHAEL VALO:** Thank you. I'm sorry. I didn't mean to  
28 speak over you all. I will try and avoid that. Now, I want to just look at one last letter in

1 this regard, if we could. It is a formal letter this time, not an internal email. It is ALS  
2 14029.

3 **--- EXHIBIT No. 148:**

4 ALS0014029 – Letter re: Support Maintenance Activities  
5 prior to Handover – 28 March 2019

6 **MR. MICHAEL VALO:** And while that is being cued up, I will  
7 introduce it, give you the context, sir. This is now March 28, 2019. It is an Alstom letter,  
8 as I said, to RTM from Mr. Justin Bulpitt of Alstom. If we scroll down -- if the court  
9 reporter can -- thank you very much. That's terrific. I'm focused on the first paragraph,  
10 sir.

11 "Alstom wants to support RTM to achieve its goal of  
12 beginning some maintenance activities as soon as  
13 possible prior to revenue service. Alstom has suggested  
14 a proactive plan of action, including a review of  
15 documentation very recently provided to gain an  
16 understanding of the baseline of acceptable conditions to  
17 maintain to, and, in the absence of maintenance records,  
18 as an assessment of the track and OCS, by which it can  
19 gain sufficient information as to the condition of the  
20 system, so that Alstom can start certain maintenance  
21 under RTM's responsibility and liability before handover.  
22 Based on that, assuming that Alstom is given the access  
23 and permits, Alstom will start to inspect the assets."

24 So, you'll agree that even formally, through the formal channels --  
25 and I acknowledge, sir, you weren't at RTM at the time, so perhaps you didn't know  
26 when you gave your evidence to the Commission, but Alstom is doing exactly what you  
27 suggest, I believe, they ought to have been doing in order to prepare themselves.  
28 Would you agree with that?



1                   **MR. MATTHEW SLADE:** Well, they wrote a letter, but I don't know  
2 that it ever happened.

3                   **MR. MICHAEL VALO:** I agree. We can't know it ever happened.  
4 But, certainly, the indications from the emails and the letter we have seen is that they  
5 were at least making the ask and appear to have been stifled in their efforts?

6                   **MR. MATTHEW SLADE:** Possibly, yes.

7                   **MR. MICHAEL VALO:** Now, I would just like to look at the last  
8 paragraph of this letter, if we could. And I hope you're able to see that. I know it's a  
9 little small, sir. But what Alstom says here is,

10                                   "Alstom would like to have a discussion to understand  
11                                   the handover process, as we believe it's not clear.  
12                                   Alstom is concerned about the potential for the system to  
13                                   be handed over before the actual asset condition is  
14                                   known and corrective actions are completed, and seeks  
15                                   clearly that Alstom will not be held liable for the cost  
16                                   deductions and failure points for deficiencies in the asset  
17                                   found during the warranty period, even if Alstom has  
18                                   inspected the asset prior to handover, but not agreed that  
19                                   the asset is in an acceptable condition."

20                   So, would you agree the concern expressed by Alstom is that the  
21 condition of the system when they get it may not be as per the specifications? There  
22 may be deficiencies that have to be addressed?

23                   **MR. MATTHEW SLADE:** Well, the contract allows for deficiencies.  
24 Everybody knows that, including Alstom. I don't really understand what you're asking  
25 me, I'm sorry.

26                   **MR. MICHAEL VALO:** Sorry, I will try to be more clear, because I  
27 do agree with you, everybody does understand there could be deficiencies. All Alstom  
28 is asking to do here, and I am asking you to confirm you understand, is that they want to

1 understand the condition of the asset before revenue service starts so that if  
2 deficiencies arise, they are in a position to say whether they existed before or after the  
3 start of revenue service. Do you agree?

4 **MR. MATTHEW SLADE:** Well, that's what the minor deficiency list  
5 is.

6 **MR. MICHAEL VALO:** Right. Well, this pertains to more than just  
7 what is on the MDL, sir. Let's turn to another issue from your interview and we will see  
8 if we can make the connection.

9 **MR. MATTHEW SLADE:** Sure.

10 **MR. MICHAEL VALO:** Your evidence -- we can take this down,  
11 please. Your evidence, sir, to Commission counsel is that, if I'm paraphrasing correctly,  
12 is that Alstom maintenance is to blame, or at least in part to blame, for the kinked or  
13 warped rail that was experienced on the system; is that right?

14 **MR. MATTHEW SLADE:** Sorry, can you say that again?

15 **MR. MICHAEL VALO:** Sure. We can -- if the transcript is  
16 available, it's at page 215 of your transcript, sir. I don't know if that can be cued up.

17 **COMMISSIONER HOURIGAN:** It can, if you give us the transcript  
18 number.

19 **MR. MICHAEL VALO:** Sure. That will take me just a moment.  
20 The copy I use, unfortunately, is not the one in the system. Let me try it without the  
21 transcript.

22 **COMMISSIONER HOURIGAN:** No, no, we've got it. Just stand  
23 by, we'll find it for you.

24 **MR. MICHAEL VALO:** Thank you, Mr. Commissioner. I was in  
25 particular looking at page 215, line 8, if that can be brought up. And all I was driving at,  
26 sir, was your evidence to Commission Counsel was that Alstom's maintenance team  
27 was at least in part responsible for the sun kinks and warped rail that were experienced  
28 during the summer months. Do you recall that?

1                   **MR. MATTHEW SLADE:** I don't recall the specifics that you are  
2 referring to, but ---

3                   **MR. MICHAEL VALO:** Okay. Well, we will have a look when it's  
4 up. So, unfortunately, the page number I have is the transcript page. So, it continues  
5 from the previous transcript. So, I think we need the May -- I think it's the transcript of  
6 the 24<sup>th</sup>. Sorry about that, Mr. Court Operator, I should have been more clear. It's TRM  
7 173, and it's transcript page 215. So, we will just have to skip forward about 45 pages.  
8 I think we should be in the vicinity. Perfect. Here we are. So, you can see we are  
9 talking about sun kinks, and if we go to line 8,

10                               "Again, it is not an uncommon thing. And, again, I think  
11                               the manner in which it was managed and dealt with in  
12                               Ottawa probably -- and I think they are probably getting  
13                               better at it, but I guess in the first couple of years the way  
14                               we managed and dealt with it was not ideal."

15                   And if you scroll down, Mr. Court Operator, to the next page, to line  
16 1, we'll see,

17                               "The guideway techs from Alstom maintenance and the  
18                               way in which they're instructed to deal with the  
19                               temperature related track movement has been  
20                               challenging. The City giving them access to the  
21                               guideway during the day and the amount of maintenance  
22                               that gets done on the track has probably been insufficient  
23                               to minimize the amount of movement."

24                   So, as I read that ---

25                   **COMMISSIONER HOURIGAN:** Sorry, Counsel, let the witness  
26 read the whole answer. So, we skipped from the top to the bottom, so I think it's fair if  
27 he could read the whole paragraph.

28                   **MR. MATTHEW SLADE:** Okay.

1                   **MR. MICHAEL VALO:** Absolutely.

2                   **MR. MATTHEW SLADE:** Okay.

3                   **MR. MICHAEL VALO:** So, if I have misinterpreted your evidence,  
4 sir, please do let me know. I had read this as at least part of the blame being on Alstom  
5 Maintenance for these sun kinks and rail movements, and if I am wrong, please let us  
6 know.

7                   **MR. MATTHEW SLADE:** I think "blame" is a strong word. So,  
8 what I was trying to convey of what I -- the way -- so track moves every day, every day  
9 of the year, doesn't matter what the temperature is; it's constantly moving, and the  
10 degree to which it moves is dependent on temperature. The amount that it moves can  
11 be controlled -- it will still move -- but can be controlled through maintenance, and all I  
12 was saying was that maybe it's moving further than it would if a certain level of  
13 maintenance activity was undertaken.

14                   But I also say in here that it's partly down to the amount of track  
15 access that they get. And the track access is not under their control; that is under the  
16 control of others. So, it is not -- I'm not blaming them. I was stating my opinion as to --  
17 and trying to explain how the track moves, and some of the things that can contribute to  
18 not the cause of it necessarily, partly the cause, but more about the rectification.

19                   **MR. MICHAEL VALO:** Okay. And I appreciate that clarification,  
20 and I certainly didn't mean to infer you were laying all the blame and also, I think I said  
21 "partial blame." But when we talk about maintenance of the track, are you aware, sir --  
22 would you agree that OLRTC performed no maintenance at all on the track after it was  
23 constructed but before RSA, which was a period of about three years, from 2016 to  
24 2019?

25                   **MR. MATTHEW SLADE:** They undertook limited maintenance, not  
26 no maintenance. But yes ---

27                   **MR. MICHAEL VALO:** Well, let's pull up -- if the Court Operator  
28 would assist -- PRR 182?

1 **--- EXHIBIT No. 149:**

2 PRR00000182 – Email Trackwork – 24 September 2020

3 **MR. MICHAEL VALO:** And this is -- if we slide down to page 2,  
4 you'll see here, sir -- sorry, if we could scroll just up a little bit, Mr. Court Operator, so we  
5 could see the -- yeah, that information there. It's an email from you, sir, Mr. Slade, to  
6 Mario Guerra, September 2020. Do you recall sending this email?

7 **MR. MATTHEW SLADE:** Yes.

8 **MR. MICHAEL VALO:** Okay. And if we scroll down just a little bit,  
9 you can see the subject line is "Track Work Warranty", and I believe what you are doing  
10 here is drafting for Mr. Guerra a letter you want sent to OLRTC as a warranty claim; is  
11 that right?

12 **MR. MATTHEW SLADE:** Sorry, can you repeat the question?

13 **MR. MICHAEL VALO:** Sure. If I understand what this email is, it  
14 is -- you've drafted an email to Mr. Guerra that is to be turned into a formal letter to be  
15 delivered to OLRTC for a warranty claim?

16 **MR. MATTHEW SLADE:** I don't know whether it turned into a  
17 letter or not. It was -- it's a draft.

18 **MR. MICHAEL VALO:** And I can assist with that. I'm happy to  
19 show you the formal letter after, but I want to start here. What you say is "as you're  
20 aware, during the heat of the summer, the track moved significantly" -- that's the first  
21 paragraph there.

22 **MR. MATTHEW SLADE:** Yes.

23 **MR. MICHAEL VALO:** And that resulted in numerous temporary  
24 speed restrictions, extensive work to introduce stress relief, et cetera. RTM has  
25 suffered service penalties and the cost of unplanned work. So, that's establishing what  
26 we're talking about here. And then if you go to the fourth paragraph, sir, which is where  
27 I'm going to focus,

28 "There appears to have been no maintenance

1 undertaken on the track since it was constructed other  
2 than the grinding that was done just after RSA and the  
3 greasing of switch plates and machines. It is clear the  
4 balance was never tamped from when it was laid until  
5 revenue service. This is some three years, 2016 to '19,  
6 with little or no maintenance. As a result, the guideway  
7 now requires extensive additional balance and  
8 tamping."

9 So, I'm going to suggest to you, sir, the real reason in 2020 that the  
10 system experienced more sun kinks than perhaps it should have -- and there was  
11 excess track movement, as you described -- was because of this, was because it was --  
12 the system was not properly maintained by OLRTC after it was constructed.

13 **MR. MATTHEW SLADE:** I think it was a contributing factor, but I  
14 don't think it's the sole factor. And as I said before, like I said, the word is "little  
15 maintenance"; it's not "no maintenance."

16 **MR. MICHAEL VALO:** Would you ---

17 **MR. MATTHEW SLADE:** It is a potential contributing factor, yes.

18 **MR. MICHAEL VALO:** Would you agree, sir, that the engineering  
19 joint venture, RTG's engineering joint venture, did a study and concluded the neutral  
20 temperature of the rail at installation was too low, which results in excess kinks in the  
21 summer?

22 **MR. MATTHEW SLADE:** I think what you are -- if I think -- if I  
23 understand what I think you're saying, so there was again -- and I can't remember  
24 whether it was around the same sort of time, and I know there was conversations held  
25 with the engineering joint venture with regards to track neutral temperatures, and those  
26 conversations also engaged with the City and the City's track engineer because the  
27 track neutral temperature as was designed was driven as a result of a requirement  
28 within the project agreement. Is that what you're referring to?

1                   **MR. MICHAEL VALO:** It could be. I'm not particularly interested in  
2 why the design was what it was; I'm just asking whether the conclusion drawn by the  
3 EJV and the City was that the neutral rail temperature specified, which was between 10  
4 and 20 degrees ---

5                   **MR. MATTHEW SLADE:** Mm-hmm.

6                   **MR. MICHAEL VALO:** Results in excessive sun kinks in hot  
7 Ottawa summers.

8                   **MR. MATTHEW SLADE:** The track neutral temperature does have  
9 an impact on the track's movement in the summer, yes.

10                  **MR. MICHAEL VALO:** Can we pull up ---

11                  **COMMISSIONER HOURIGAN:** Counsel, we're going to take the  
12 lunch break now.

13                  **MR. MICHAEL VALO:** Oh, thank you, Mr. Commissioner ---

14                  **COMMISSIONER HOURIGAN:** Until 2:00.

15                  **THE REGISTRAR:** Order. All rise. The Commission will adjourn  
16 until 2:00 p.m.

17 --- Upon recessing at 12:58 p.m.

18 --- Upon resuming at 2:00 p.m.

19                  **COMMISSIONER HOURIGAN:** All right, Mr. Valo, continue  
20 please?

21                  **MR. MICHAEL VALO:** Thank you, Mr. Commissioner. Just to  
22 reorient us very quickly, we were talking about rail movements and the kinks and  
23 buckling rail that were experienced on the project in the summer. I had shown you, Mr.  
24 Slade, an email that you sent to Mr. Guerra. It was a draft letter and I had promised just  
25 before the break that I would show you it was, in fact, turned into a project letter. I will  
26 bring it up for you, sir. It's PRR 182.0004, just for the sake of closing the loop on this.

27 **--- EXHIBIT No 150:**

28                                   PRR00000182.0004 – RTM Letter Trackwork Warranty

1 Claim – 23 September 2020

2 **MR. MICHAEL VALO:** So, you will see here, sir, it is on RTM letter  
3 head to Gonzalo Gomeza of OLRTC, and if you scroll down, I will just validate this is the  
4 same letter. We can see -- sorry, Mr. Court Operator, just the first page will be fine.  
5 Thank you.

6 “As you are aware, during the heat of the summer, the track moved significantly.” And  
7 then fourth paragraph, which is the one we had focused on, sir, “There appears to have  
8 been no maintenance undertaken at the track.” And then if you go just to the start of the  
9 next page, Mr. Court Operator, thank you. “With regards to the neutral temperature and  
10 the thermal stress on the rail, it would appear the design has been insufficient.” And  
11 that is from Mario Guerra, as you can see, right?

12 **MR. MATTHEW SLADE:** Yes.

13 **MR. MICHAEL VALO:** So, certainly, the position of RTM, and you,  
14 yourself, Mr. Slade, was that at least the issue of the buckling and the rail kinks was a  
15 construction and design deficiency; would you agree?

16 **MR. MATTHEW SLADE:** Can you say that again, please?

17 **MR. MICHAEL VALO:** Sure. From your perspective, sir, and  
18 RTM’s perspective, at the time, in September 2020, the rail kinks and the rail warping  
19 that were experienced in the summer, were the result of construction and design  
20 defects?

21 **MR. MATTHEW SLADE:** That was my position at the time. It is  
22 not my position now.

23 **MR. MICHAEL VALO:** Okay. We can take that down, please. Mr.  
24 Slade, do you agree that RTM was required to supply two-wheel lathes to the project?

25 **MR. MATTHEW SLADE:** No.

26 **MR. MICHAEL VALO:** Okay. Can we pull up, please, the  
27 maintenance subcontract? And it is PRR 119. And I am going to ask for us to be taken  
28 to page 418, which is attachment 48 of the maintenance subcontract. And if we scroll



1 down just a little bit, please -- sorry, let me just read the heading into the record, if I  
2 might. Attachment 48, "CC Equipment". That is construction contractor equipment?

3 **--- EXHIBIT No 151:**

4 PRR0000119 – RTM – Alstom Amended and Restated

5 Maintenance Subcontract – 2 October 2019

6 **MR. MATTHEW SLADE:** Okay.

7 **MR. MICHAEL VALO:** Is that right, sir?

8 **MR. MATTHEW SLADE:** I don't know.

9 **MR. MICHAEL VALO:** And I will just direct your attention to about  
10 -- I am looking for the line item here that says "dual-headed wheel truing machine with  
11 chip removal system". Oh, pardon me, that's the next one. We are at 418. I am going  
12 to get there. So, if we go down to the bottom, you will see there "single-axle wheel  
13 truing machine with chip removal system." Do you see that, sir?

14 **MR. MATTHEW SLADE:** Yes.

15 **MR. MICHAEL VALO:** Okay. And that is a wheel lathe. You'd  
16 agree?

17 **MR. MATTHEW SLADE:** It sounds like one.

18 **MR. MICHAEL VALO:** Right. And if we scroll further to page 421,  
19 please, what we have here is the Stage 2 Belfast MSF expansion, and there is  
20 additional equipment that was required to be provided under the maintenance  
21 subcontract by RTM. And if we scroll down a little lower, what we will see is -- I'm sorry,  
22 just -- it is about halfway on the page, sir, the "dual-headed wheel truing machine with  
23 chip removal system." Do you see that?

24 **MR. MATTHEW SLADE:** Yes.

25 **MR. MICHAEL VALO:** So, you would agree that under the  
26 maintenance subcontract, RTM did, in fact, have a requirement or an obligation to  
27 provide two-wheel truing machines, one single and one double?

28 **MR. MATTHEW SLADE:** Okay.

1                   **MR. MICHAEL VALO:** Okay. And would you agree that it was  
2 RTMs responsibility to maintain the wheel lathe?

3                   **MR. MATTHEW SLADE:** I don't know.

4                   **MR. MICHAEL VALO:** Pardon me?

5                   **MR. MATTHEW SLADE:** I don't know.

6                   **MR. MICHAEL VALO:** Oh, okay. So, if we can go to page 414 of  
7 this ---

8                   **MR. MATTHEW SLADE:** Sorry, can I just -- what is this document,  
9 sorry?

10                  **MR. MICHAEL VALO:** This is the maintenance subcontract.  
11 Alstom's maintenance subcontract with RTM.

12                  **MR. MATTHEW SLADE:** Right. Okay. And just, before we just go  
13 away from these, so ---

14                  **MR. MICHAEL VALO:** Sure.

15                  **MR. MATTHEW SLADE:** Because I have not seen this before,  
16 okay? The wheel lathes that you had there, was one for Stage 2 and one for Stage 1?

17                  **MR. MICHAEL VALO:** Correct. But to be clear, Stage 2 of the  
18 MSF, sir, not Stage 2 as in Stage 2 of the project.

19                  **MR. MATTHEW SLADE:** But the Stage 2 of the MSF is part of  
20 Stage 2 of the project.

21                  **MR. MICHAEL VALO:** But you would agree that the Stage 2 MSF  
22 was intended to be complete by RSA so that maintenance activities could continue in  
23 parallel with vehicle manufacturing?

24                  **MR. MATTHEW SLADE:** Okay.

25                  **MR. MICHAEL VALO:** Okay. So, I was just asking you, sir, if you  
26 were aware whether or not RTM had the obligation to maintain the wheel lathe, that  
27 piece of equipment.

28                  **MR. MATTHEW SLADE:** Right.

1                   **MR. MICHAEL VALO:** And you had said you weren't sure, so I  
2 was going to take us to the section of the subcontract which confirms that to be the  
3 case, and that is at page -- and here we are -- at 414. And I will just find where we are  
4 at. But if you look, sir, under "Depot Fixed Plant", so that's the second large category ---

5                   **MR. MATTHEW SLADE:** Yes.

6                   **MR. MICHAEL VALO:** I am not at the second item there  
7 underneath maintenance subcontractor conducts first line maintenance and qualifier to  
8 report all of the failures for the wheel lathe. So, the maintenance subcontractor, that's  
9 Alstom. They do the first line maintenance, and then everything else gets reported to  
10 the centre, is that correct?

11                  **MR. MATTHEW SLADE:** That's what that says.

12                  **MR. MICHAEL VALO:** Okay. And the maintenance contractor,  
13 that's RTM, sir? I am looking on the far right?

14                  **MR. MATTHEW SLADE:** Okay.

15                  **MR. MICHAEL VALO:** And that -- so this column indicates the  
16 maintenance contractor's responsibility and they -- if you look at wheel lathe, have a  
17 four-hour response time.

18                  **MR. MATTHEW SLADE:** Okay.

19                  **MR. MICHAEL VALO:** Okay. So you'd agree with me that RTM is  
20 in fact responsible for maintaining the wheel?

21                  **MR. MATTHEW SLADE:** That's what this looks like, yes.

22                  **MR. MICHAEL VALO:** Okay. And a functioning lathe or wheel  
23 truing machine is critical to ensure that the vehicle's wheels are always true, always  
24 perfectly round?

25                  **MR. MATTHEW SLADE:** Yes.

26                  **MR. MICHAEL VALO:** And a flat wheel can cause an LRV to be  
27 taken out of service; is that right?

28                  **MR. MATTHEW SLADE:** Depending on the extensiveness of the

1 flatness, yes.

2 **MR. MICHAEL VALO:** So a wheel lathe, or wheel lathes, are  
3 critical to maintaining service levels?

4 **MR. MATTHEW SLADE:** Yes.

5 **MR. MICHAEL VALO:** Now are you aware, sir, that RTM in fact  
6 only provided one wheel lathe and not two at the start of service?

7 **MR. MATTHEW SLADE:** Yes.

8 **MR. MICHAEL VALO:** And in the system's first winter of revenue  
9 service, there was an excessive number of wheel flats that required wheel truing; would  
10 you agree with that?

11 **MR. MATTHEW SLADE:** Yes.

12 **MR. MICHAEL VALO:** And in fact, during that period, the wheel  
13 lathe was broken for an extended period of time, and so wheels couldn't be cut; is that  
14 right?

15 **MR. MATTHEW SLADE:** Yes.

16 **MR. MICHAEL VALO:** And as a result, trains were not available  
17 for service?

18 **MR. MATTHEW SLADE:** I don't know that the wheel lathe was the  
19 only cause, but it was a contributing factor.

20 **MR. MICHAEL VALO:** That's all I'm asking. That's fair, sir. Thank  
21 you.

22 Now would you agree that had RTM supplied two wheel lathes as it  
23 was required, the defect in the first wheel lathe would not have been as big a deal?

24 **MR. MATTHEW SLADE:** Potentially.

25 **MR. MICHAEL VALO:** And eventually, as I understand it, and in  
26 fact on your recommendations, as I understand from your evidence, our team ultimately  
27 hire a permanent millwright for their staff to address wheel lathe issues in real time; is  
28 that right?

1                   **MR. MATTHEW SLADE:** It was to address equipment issues, not  
2 just the wheel lathe.

3                   **MR. MICHAEL VALO:** But the wheel lathe was one of the pieces  
4 of equipment that millwright would be there to assist in ---

5                   **MR. MATTHEW SLADE:** Yes.

6                   **MR. MICHAEL VALO:** --- fixing. And would you agree the  
7 reliability of the wheel lathe has improved as a result of the millwright being on staff?

8                   **MR. MATTHEW SLADE:** That has contributed. It's not been the  
9 only reason that it has improved.

10                  **MR. MICHAEL VALO:** Okay. That's all fair. Thank you, sir.

11                   I want to turn next to the issue of switch heaters, and, Mr. Court  
12 Operator, we can take that -- the document down. Thank you very much.

13                   You told Commission Counsel, sir, that one of the reasons the  
14 switch heaters don't work is that they're not being operated and maintained correctly.  
15 Do you recall that?

16                  **MR. MATTHEW SLADE:** Yes.

17                  **MR. MICHAEL VALO:** And your evidence, if I'm paraphrasing  
18 correctly, was that Alstom should have learned how to use the switch heaters prior to  
19 RSA by tagging along with OLRTC. Do you recall giving that evidence?

20                  **MR. MATTHEW SLADE:** Vaguely, yes.

21                  **MR. MICHAEL VALO:** But in fact, sir, I don't know whether you  
22 know, that is actually what happened, and I'd like to look at an email, if we could, from  
23 Steve Nadon. It is COMH23. And if we could pull that up?

24                  **--- EXHIBIT No 152:**

25                                   COMH0000023 – Email Switch Heater Inspection – 8

26                                   November 2018

27                  **MR. MICHAEL VALO:** This is a November 2018 email -- email  
28 chain, actually. And I'm going to ask that we scroll to the bottom and start where the

1 chain begins, if we could. And if we -- you could see it's from Steve Nadon, sir, and it's  
2 to Dean Gorman, who's an individual we've now come across in our examination. And  
3 Mr. Nadon says,

4 "As per our conversation, T&C will be performing  
5 inspections and start-up of the 26 electric track switch  
6 heaters along the guideway. If you can provide some  
7 of your technical resources to support us doing this  
8 work, we'll provide a knowledge transfer to your team  
9 who know as much about the units as we do. Please  
10 let me know by November 10." (As read)

11 And if we scroll up, we'll see Dean forwards this to Marlon, who's  
12 on his team, and says,

13 "This will be a great time for some of your team to see  
14 all of those here as I'd like to see at least two of your  
15 team out there for these inspections." (As read)

16 And if we scroll up further, you'll see that Mr. Gorman responds --  
17 or that Marlon and -- or pardon me, Marlon Stewart responds that me and Elvis will be  
18 going out with T&C for Saturday.

19 So you'd agree based on this email, it does appear that the  
20 activities you suggested should have happened, i.e., Alstom tagging along with OLRTC  
21 to see how this equipment worked before RSA, that was actioned?

22 **MR. MATTHEW SLADE:** Okay.

23 **MR. MICHAEL VALO:** Okay. Now it's a fact, isn't it, sir, that  
24 OLRTC actually agreed to replace many of the electric switch heaters with gas switch  
25 heaters?

26 **MR. MATTHEW SLADE:** I think RTG agreed to, but, yes.

27 **MR. MICHAEL VALO:** Thank you for that. RTG agreed. Because  
28 it was determined that the electric switch heaters were under powered?

1                   **MR. MATTHEW SLADE:** I don't know that that's the reason.

2                   **MR. MICHAEL VALO:** Well, are you aware that the City originally  
3 rejected OLRTC's position that they simply needed to be maintained and redirected and  
4 modified?

5                   **MR. MATTHEW SLADE:** I'm aware the City rejected that position,  
6 yes.

7                   **MR. MICHAEL VALO:** And those switch heaters were replaced?

8                   **MR. MATTHEW SLADE:** They were.

9                   **MR. MICHAEL VALO:** And at RTG's cost; is that right?

10                  **MR. MATTHEW SLADE:** RTG did pay for it, yes.

11                  **MR. MICHAEL VALO:** Okay. Mr. Slade, I appreciate your time  
12 today. Those are all my questions. Thank you, Mr. Commissioner.

13                  **COMMISSIONER HOURIGAN:** All right. Thanks for that, Counsel.  
14 Next up is STV.

15                  We can't hear you, Counsel.

16                  **MR. THEO MILOSEVIC:** Good afternoon. Apologies. Can you  
17 hear me now?

18                  **COMMISSIONER HOURIGAN:** Yes, I can.

19                  **MR. THEO MILOSEVIC:** This is Theo Milosevic for SUV. SUV has  
20 no questions for this witness. Thank you.

21                  **COMMISSIONER HOURIGAN:** All right. Thank you.

22                  Next is RTG EJV.

23                  **MR. MICHAEL VRANTSIDIS:** Yes, hello, Mr. Commissioner. I'm  
24 just getting on video here. Michael Vrantsidis for RTG EJV. We do not have any  
25 questions for this witness. Thank you.

26                  **COMMISSIONER HOURIGAN:** All right. Thank you.

27                  Next up is Thales?

28                  **MS. JENNIFER McALEER:** Good afternoon, Mr. Commissioner.

1 **--- CROSS-EXAMINATION BY MS. JENNIFER McALEER:**

2 **MS. JENNIFER McALEER:** Good afternoon, Mr. Slade.

3 **MR. MATTHEW SLADE:** Good afternoon.

4 **MS. JENNIFER McALEER:** My name is Jennifer McAleer and I'm  
5 one of the lawyers who's acting for Thales in these proceedings. I only have a few  
6 questions for you this afternoon.

7 You testified that you initially were involved during the off-project  
8 review that you did before you formally joined the project later in 2018; is that correct?

9 **MR. MATTHEW SLADE:** Yes.

10 **MS. JENNIFER McALEER:** Okay. And during that off-project  
11 review, did you have the opportunity to work with anybody from Thales?

12 **MR. MATTHEW SLADE:** Yes.

13 **MS. JENNIFER McALEER:** Okay. And did you meet Michael  
14 Burns?

15 **MR. MATTHEW SLADE:** Yes.

16 **MS. JENNIFER McALEER:** And Allan Crew?

17 **MR. MATTHEW SLADE:** Yes.

18 **MS. JENNIFER McALEER:** And would you agree that Thales was  
19 transparent with the OLRTC about the challenges it saw on the project?

20 **MR. MATTHEW SLADE:** Yes.

21 **MS. JENNIFER McALEER:** And would you agree that Thales also  
22 worked collaboratively with the OLRTC towards a revised RSA date?

23 **MR. MATTHEW SLADE:** Yes.

24 **MS. JENNIFER McALEER:** And since the OLRT system has gone  
25 into revenue service, is it true that you have found the Thales system to be reliable?

26 **MR. MATTHEW SLADE:** Yes.

27 **MS. JENNIFER McALEER:** And overall, you have found the  
28 Thales system has performed as expected?



1                   **MR. MATTHEW SLADE:** Yes.

2                   **MS. JENNIFER McALEER:** Thank you, sir. Those are all of my  
3 questions.

4                   **COMMISSIONER HOURIGAN:** All right. Thank you, Counsel.  
5 Next is Amalgamated Transit Union Local 279.

6                   **MR. JOHN McLUCKIE:** Good afternoon, Mr. Commissioner.  
7 Thank you for the time.

8 **--- CROSS-EXAMINATION BY MR. JOHN McLUCKIE:**

9                   **MR. JOHN McLUCKIE:** Mr. Slade, I represent the Amalgamated  
10 Transit Union, which in turn represents the employees both at Alstom and at the OC  
11 Transpo, and I just have a few questions for you. I have about five minutes.

12                   I'd like to focus first on the parallel bus service, if I could. So in July  
13 of 2019, when the trial run is happening, the City is still running buses to and from the  
14 downtown core?

15                   **MR. MATTHEW SLADE:** I believe so.

16                   **MR. JOHN McLUCKIE:** And it's those buses that are transporting  
17 passengers, not the train at this point; right?

18                   **MR. MATTHEW SLADE:** Correct.

19                   **MR. JOHN McLUCKIE:** And when the City introduces the idea of  
20 bringing the service into operation in September, did you have a view towards whether  
21 that bus service should continue or not?

22                   **MR. MATTHEW SLADE:** Yes.

23                   **MR. JOHN McLUCKIE:** And did you express that view to the City?

24                   **MR. MATTHEW SLADE:** I was part of a conversation with other  
25 people where I suggested that that would be a sensible thing to do.

26                   **MR. JOHN McLUCKIE:** And why did you feel continuing the bus  
27 service would be a sensible thing to do?

28                   **MR. MATTHEW SLADE:** Because I regarded it as good industry

1 practice. I thought turning off the buses in one gob was not a wise thing to do.

2 **MR. JOHN McLUCKIE:** And do you recall in the interview you  
3 gave with Commission Counsel earlier that you indicated the City was in fact eager, to  
4 use your words, to remove the parallel bus service?

5 **MR. MATTHEW SLADE:** Yes.

6 **MR. JOHN McLUCKIE:** And you indicated in your interview with  
7 Commission Counsel that that eagerness related to the fact that they had issued layoff  
8 notices for about 350 bus drivers?

9 **MR. MATTHEW SLADE:** Well, that was what I believed was the  
10 reason for it. I don't know that for a fact. That was my feeling, my assumption.

11 **MR. JOHN McLUCKIE:** Okay. So your assumption, based on the  
12 information that you had, was the City wanted to eliminate and thus stop paying for the  
13 350 bus operators that that involved?

14 **MR. MATTHEW SLADE:** Yes, I believe – I seem to recall reading  
15 something as well in the media along those lines that sort – because where my thought  
16 process was – I had seen something similar around the same time in the media that –  
17 the media had obviously been thinking the same thing, so I didn't think I was necessarily  
18 wrong.

19 **MR. JOHN McLUCKIE:** And given what you knew of the reliability  
20 of the system at that point, so this was in September of 2019, did you have an opinion  
21 on the wisdom of stopping that parallel bus service?

22 **MR. MATTHEW SLADE:** I'm not sure what you mean, sorry.  
23 What do you mean by the "wisdom" of it?

24 **MR. JOHN McLUCKIE:** Did you consider it to be a good idea?

25 **MR. MATTHEW SLADE:** No.

26 **MR. JOHN McLUCKIE:** Moving on to another area, if I could  
27 again, I have a fairly limited amount of time here, sir. The maintenance at Alstom, you  
28 gave an interview earlier with the commission counsel and you indicated that in your

1 view they were not properly staffed for the maintenance function; do you remember  
2 saying that?

3 **MR. MATTHEW SLADE:** Yes.

4 **MR. JOHN McLUCKIE:** And you indicated that there were not  
5 only gaps in their staffing level, you also indicated there were gaps in their skills' level?

6 **MR. MATTHEW SLADE:** I was concerned, yes.

7 **MR. JOHN McLUCKIE:** And you also indicated you had a  
8 concern as to gaps in their equipment, in the equipment that they had?

9 **MR. MATTHEW SLADE:** I don't remember that part specifically,  
10 but I may have ---

11 **MR. JOHN McLUCKIE:** And in your interview you indicated that  
12 even if the service had been operating at full reliability, you would still have had  
13 concerns with respect to the number of staff that Alstom had for the maintenance  
14 functions; do you remember giving that answer?

15 **MR. MATTHEW SLADE:** Yes.

16 **MR. JOHN McLUCKIE:** And do you continue to have that opinion,  
17 that Alstom at that point in time was understaffed for the maintenance operations?

18 **MR. MATTHEW SLADE:** Yes.

19 **MR. JOHN McLUCKIE:** And do you feel that that impacted the  
20 reliability of the system?

21 **MR. MATTHEW SLADE:** Partly, yes.

22 **MR. JOHN McLUCKIE:** So had Alstom been properly staffed, the  
23 system might have been more reliable?

24 **MR. MATTHEW SLADE:** Yes.

25 **MR. JOHN McLUCKIE:** A few questions about the maintenance  
26 of way and the maintenance of the electrical system within the light rail system. So that  
27 was also Alstom's responsibility, not just to maintain the trainsets, but they also  
28 maintained the guideway and the overhead electrical systems?

1                   **MR. MATTHEW SLADE:** Yes, they have all of the systems and all  
2 of the infrastructure.

3                   **MR. JOHN McLUCKIE:** And that's again their maintenance teams  
4 that are responsible for that; correct?

5                   **MR. MATTHEW SLADE:** Yes.

6                   **MR. JOHN McLUCKIE:** And that's their obligation under their  
7 contract with RTG and in turn RTG's contract with the City?

8                   **MR. MATTHEW SLADE:** RTM and then RTM with RTG and then  
9 RTG with the City; I believe so, yes.

10                  **MR. JOHN McLUCKIE:** I'm sorry, I skipped a loop.

11                  **MR. MATTHEW SLADE:** That's right.

12                  **MR. JOHN McLUCKIE:** You offered some commentary in terms  
13 of how track maintenance, for example, should be done as a best practice; do you recall  
14 giving that interview to Commission counsel?

15                  **MR. MATTHEW SLADE:** I do.

16                  **MR. JOHN McLUCKIE:** And you indicated the best practices in  
17 your opinion, are that you get out and walk the track on a daily basis; do you recall  
18 telling her that?

19                  **MR. MATTHEW SLADE:** Yes.

20                  **MR. JOHN McLUCKIE:** And do you still believe that to be true?

21                  **MR. MATTHEW SLADE:** I do.

22                  **MR. JOHN McLUCKIE:** And you indicated that rather than walk  
23 the track, that Alstom instead used a pick-up truck that's equipped with a rail wheel  
24 converter kit?

25                  **MR. MATTHEW SLADE:** Yes.

26                  **MR. JOHN McLUCKIE:** And instead of walking the track, they  
27 effectively drive the track?

28                  **MR. MATTHEW SLADE:** Correct.

1                   **MR. JOHN McLUCKIE:** And I'm going to put to you, that that  
2 allows you to more quickly go from one end of the track to the other; correct?

3                   **MR. MATTHEW SLADE:** Yes.

4                   **MR. JOHN McLUCKIE:** And there's a labour saving involved in  
5 performing track maintenance in that fashion rather than walking, as you indicated, was  
6 a better practice? It takes less people?

7                   **MR. MATTHEW SLADE:** Not necessarily.

8                   **MR. JOHN McLUCKIE:** Would you agree that Alstom should have  
9 conducted track maintenance in that fashion?

10                  **MR. MATTHEW SLADE:** I would like them to have done, yes.

11                  **MR. JOHN McLUCKIE:** Did you express that opinion to them?

12                  **MR. MATTHEW SLADE:** Yes.

13                  **MR. JOHN McLUCKIE:** And did they change their practice?

14                  **MR. MATTHEW SLADE:** No.

15                  **MR. JOHN McLUCKIE:** You also offered some comments in  
16 terms of the electrical systems and the overhead wires and you indicated the best  
17 practices would be, again, to get up in a bucket truck and visually inspect the wires on a  
18 regular basis; do you recall that?

19                  **MR. MATTHEW SLADE:** Yes.

20                  **MR. JOHN McLUCKIE:** And you indicated that instead Alstom  
21 was inspecting the wires from track level?

22                  **MR. MATTHEW SLADE:** Yes.

23                  **MR. JOHN McLUCKIE:** Again, was that best practices?

24                  **MR. MATTHEW SLADE:** In my opinion, yes.

25                  **MR. JOHN McLUCKIE:** What Alstom was saying best practice or  
26 what you were suggesting was a better practice?

27                  **MR. MATTHEW SLADE:** Sorry, getting up in a bucket truck I  
28 regard as being a better practice.

1                   **MR. JOHN McLUCKIE:** Did Alstom accept your suggestion?

2                   **MR. MATTHEW SLADE:** No.

3                   **MR. JOHN McLUCKIE:** Had Alstom accepted either of those  
4 suggestions with respect to the rail inspections or the overhead power inspections, do  
5 you feel it would have improved reliability of the service?

6                   **MR. MATTHEW SLADE:** Yes.

7                   **MR. JOHN McLUCKIE:** Those are all my questions, sir. Thank  
8 you.

9                   **COMMISSIONER HOURIGAN:** All right, thank you, counsel. All  
10 right, next up is the witness's counsel, so counsel for OLRTC or RTM?

11 **--- CROSS-EXAMINATION BY MR. JEAN-CLAUDE KILLEY:**

12                   **MR. JEAN-CLAUDE KILLEY:** Good afternoon, Mr. Slade.

13                   **MR. MATTHEW SLADE:** Good afternoon.

14                   **MR. JEAN-CLAUDE KILLEY:** I think you clarified in your  
15 evidence with Commission counsel and then with Mr. Wardle for the City what a  
16 burning-in period is. Can I ask you about the sort of three terms we've heard somewhat  
17 frequently in the evidence in this inquiry: a "bedding-in" period, a "soft launch", a "partial  
18 opening". Can you distinguish what all of those terms mean, to the extent they mean  
19 something different?

20                   **MR. MATTHEW SLADE:** I can try. And others might have a  
21 different opinion, of course.

22                   We'll start with the first one, "bedding-in", I think that's the first one  
23 you mentioned. So "bedding-in", for me, is essentially very similar to what we did for  
24 trial runnings. It's the period between trial running and going into service. It is a period  
25 when you operate the system as though it was live with passengers but without the  
26 passengers. It's kind of a "soak test", for want of a better term. And it's just that  
27 reliability growth period that you would run a period of time prior to opening up to – I  
28 would say before a soft launch or before going into service.

1 I know certainly there are some contracts that have a contractual  
2 definition term with “bedding-in” as well. We didn’t have that in the project agreement  
3 here.

4 So the “soft launch”, it’s a term that comes from the restaurant  
5 industry actually, and although it’s used extensively in transit and infrastructure projects.  
6 It is where you would open the system up at a progressive rate rather than going all the  
7 way to full service.

8 So you would either – I think as I mentioned earlier, you would  
9 either operate the system at reduced hours so that you still have an opportunity to have  
10 increased maintenance hours to deal with any issues that crop up during those  
11 operating hours. And it give everyone a chance to become familiar with the system,  
12 whether that’s the operators or the maintenance team or the public.

13 And then “partial opening” that you mentioned, is when you might –  
14 I’ll say “segregate” or utilize parts of the system rather than the whole of the system.  
15 And that’s normally a geographic portion. So on this job, we talked about between Blair  
16 and the University of Ottawa which is probably close to half the length of the railway.  
17 And I think from the conversation earlier, we talked about operating 6 LRVs on that.  
18 And that’s purely because you wouldn’t – you can’t physically run 15 LRVs on there.  
19 When you reduce the size of the geography, you have to reduce the number of  
20 vehicles. So a partial opening is that, it’s where you might then, again, only open up a  
21 portion of the line.

22 And I think one of the things that came out; I didn’t discuss it at the  
23 time because the question didn’t read that way. But when we were talking about that  
24 partial opening, and I think it was Mr. Wardle who asked me about it, and then talked  
25 about the parallel or the buses at the time.

26 My expectation, it wasn’t that the buses would carry passengers to  
27 the light rail and then they would travel on the light rail and get off the light rail and then  
28 get back on the bus. I was still expecting buses to run adjacent to the line, in parallel

1 service still. And people would have the choice as to whether or not they chose to  
2 deviate on to the LRT or remain on the bus. It was not a case of forcing people to use  
3 it; that was the plan with a partial opening. But as we know, the City didn't like that  
4 option..

5 **MR. JEAN-CLAUDE KILLEY:** Thanks. I want to ask a bit about  
6 the disruptions that occurred post-revenue service and before that the issues, in  
7 particular, that you were experiencing at OLRTC with Alstom trains in the period before  
8 revenue service. So to do that, I think I'd like to show you a document that's number  
9 COW0548732, COW0548732.

10 Is this something you recognize as having -- something you would  
11 have seen at the time, September 2019?

12 **MR. MATTHEW SLADE:** Yes.

13 **MR. JEAN-CLAUDE KILLEY:** Could we scroll down slowly to the  
14 first graph, just on the next page. Here we are.

15 So there's a table here of what's titled "Main events per function".  
16 Can you explain what you understand this table is showing?

17 **MR. MATTHEW SLADE:** So this, as I understand it, shows time  
18 and mileage on the left-hand side, and then the majority of the columns are, I guess, the  
19 core subsystems on a vehicle, and then across the bottom it shows the number of  
20 occurrences. It says, "Main events"; I can't honestly recall what defined the word,  
21 "Main" but these are a number of events in each of those different main subsystems on  
22 the vehicle in that time period.

23 **MR. JEAN-CLAUDE KILLEY:** Are you able to say, either from the  
24 information you have here or from your memory, what ratio, what number of these  
25 events were related to systems integration problems?

26 **MR. MATTHEW SLADE:** I think at the time, not many. I think at  
27 the time there was potentially one under the -- what's identified as PIS there, which is  
28 Passenger Information System, I think some of those -- not all of them but some of them



1 were related to an integration issue with regards to an input and an output between  
2 Alstom and Thales. But if I recall correctly, that was rectified, either just before or just  
3 after RSA, with a software update. The majority of the rest of these are, I would not  
4 regard as an integration-related issue; they are a component-reliability issue.

5 **MR. JEAN-CLAUDE KILLEY:** Is the -- the one issue you do  
6 remember being related to systems integration, did that relate to that rear-view camera?

7 **MR. MATTHEW SLADE:** So there was -- the rear-view camera is  
8 -- at the time there was some deep discussion around integration and there was an  
9 understanding there was a change to the inputs and outputs from the -- what the Alstom  
10 system was reading from the Thales system, and that was corrected. But the issue with  
11 the rear-view cameras has persisted to this day. And I believe that is still -- rests in a  
12 system that is an Alstom system and not an integration system. The integration piece  
13 with that -- I'm going to get a little bit technical but basically as a train pulls into a station,  
14 it relies on something called High-Speed Data Radio, HSDR, to capture images from  
15 the fixed cameras that are on the platform canopies or platform ceilings, and it transmits  
16 that image wirelessly to screens within the train cab, so that the operator, the train  
17 driver, has a view down the edge of the platform.

18 The reason I don't regard it as an integration issue is the fact that  
19 all the cameras on the platforms can be viewed from the control rooms and they're all  
20 perfectly visible. And, also, the issue that is occurring, that is causing the problems  
21 which is either the driver either doesn't get an image at all or sometimes gets a distorted  
22 image or something like that, is not consistent across all trains and all fleets, and  
23 therefore it's not an integration issue because if it was an integration issue, it would  
24 affect the entire fleet, because they all have the same software on them, they all have  
25 the same interface with the platform and with the High-Speed Data Radio. And it's  
26 inconsistent, the failures; it's not every train, every station, every time. It's not even  
27 every train at one station at a time; it is random, and therefore I don't regard it as an  
28 integration issue, I see it as a component issue, either with the software on the train that

1 is carrying that data, or it's with the screens or a wiring issue within the train of some  
2 sort. I'm not entirely sure. It's still being -- it's still an issue and it's still something else  
3 that we're looking at.

4 **MR. JEAN-CLAUDE KILLEY:** If you think back to the period  
5 around substantial completion when we've heard, I think you said this morning, there  
6 were still some reliability issues with the train, what was the status of systems  
7 integration at that point?

8 **MR. MATTHEW SLADE:** The system integration was -- if it wasn't  
9 complete, it was in the 90<sup>th</sup> percentile; at substantial completion. All the tests had been  
10 complete, so other than any of the integration tests that were on the list that were shown  
11 earlier that we agreed with the City we'd deal with during RSA, the integration was  
12 complete.

13 **MR. JEAN-CLAUDE KILLEY:** So the problems you were  
14 experiencing that time with reliability of the trains, were they related to that systems  
15 integration, or not?

16 **MR. MATTHEW SLADE:** Not in my opinion. And as an example,  
17 here on the screen, at the bottom there, the last line, PACIS, which is software on the  
18 train, it does interface with other things but -- and then HPU, for example, which is the  
19 High-Pressure Unit in the brake circuitry of the train, doesn't interface with anything  
20 other than the brakes of the train, so there is no integration issue there at all; it's part of  
21 a closed circuit on the train, so it's a mechanical device that adjusts the pressure and  
22 brake fluid in the system.

23 **MR. JEAN-CLAUDE KILLEY:** And then I'll ask you some more  
24 questions for the period after revenue service, the fall of 2019, those few months where  
25 there were a number of reports of problems that essentially caused service disruptions  
26 that were very impactful on the public. Without having a detailed list of all occurrences  
27 before you, what do you recall about the nature of those problems and the extent to  
28 which they were related to the integration if the systems or to something else?

1                   **MR. MATTHEW SLADE:** So the most, I guess disruptive, I think is  
2 the way -- is the easiest way to describe them, the most disruptive issues on the service  
3 and on the public -- I won't list them all but some of them have been mentioned today --  
4 were not integration-related. So we had line inductor failures on the roof of the train  
5 which were not integration related; that was a quality issue with the component and an  
6 issue with regards to dirt and grime. We had, someone mentioned earlier, a catenary  
7 failure. It wasn't strictly a catenary failure, but that was a -- either a loose bolt or  
8 another mechanical issue associated with how the catenary was affixed to the civil  
9 infrastructure aside to -- next to the track. And then brake issues that we had, again  
10 component-issue related. Crack wheels, no interface issue there, it's not an integration  
11 issue. The majority of the things that have had a systematic or a major disruption factor  
12 on the travelling public and service, have not -- the root causes have not been in system  
13 integration, in my opinion.

14                   **MR. JEAN-CLAUDE KILLEY:** Okay, thanks.

15                   We can take this document down. I have another document to  
16 show you, moving onto a slightly different topic. It's AGG0000129. And the last page of  
17 this document.

18                   Do you recognize this list?

19                   **--- EXHIBIT No. 153:**

20                   AGG0000129 – Ottawa Light Rail System – IC Report on  
21                   RSA – 31 August 2019

22                   **MR. MATTHEW SLADE:** Yes.

23                   **MR. JEAN-CLAUDE KILLEY:** Am I right that this is the list of  
24 minor deficiencies that were to be resolved before revenue service?

25                   **MR. MATTHEW SLADE:** Yes.

26                   **MR. JEAN-CLAUDE KILLEY:** And scrolling down a little bit, is it  
27 right that those deficiencies that have a number that starts with LRV are vehicle related?

28                   **MR. MATTHEW SLADE:** That's my understanding, yes.

1                   **MR. JEAN-CLAUDE KILLEY:** Do you know if these were, in fact,  
2 all resolved before revenue service?

3                   **MR. MATTHEW SLADE:** No, they were not. Some of them are  
4 still at large now.

5                   **MR. JEAN-CLAUDE KILLEY:** Do you know which remain  
6 unresolved to this day?

7                   **MR. MATTHEW SLADE:** So, I know for a fact LRV 41 there, that  
8 says NVR tamper-proof seals, it's still not closed, as an example. So, NVR is a network  
9 video recorder. That's an onboard recording that records the CCTV footage either from  
10 within the train or the forward-facing and rearward-facing cameras. And as a result of,  
11 unfortunately, incidents like the ones that we had with regards to derailments, the whole  
12 purpose is these things are supposed to be sealed and tamper-proof, a bit like a black  
13 box on an aircraft, and then when there is an event, that it gets removed. If it doesn't  
14 have a tamper-proof seal on it, you don't know when it was last removed or inserted.  
15 And those tamper-proof seals either don't exist on all the trains or some were installed  
16 and have not been replaced as a result of improper installation, just as an example.

17                   **MR. JEAN-CLAUDE KILLEY:** Sticking with that example, do you  
18 know anything about why that minor deficiency isn't resolved yet?

19                   **MR. MATTHEW SLADE:** I could only provide an opinion; I don't  
20 know for a fact.

21                   **MR. JEAN-CLAUDE KILLEY:** That's fair enough. I am essentially  
22 wanting to give you the chance to give whatever explanation you know about as to why  
23 it might not be resolved.

24                   **MR. MATTHEW SLADE:** So, I think, and I can't remember how  
25 many were on here in total at the beginning, and I don't need you to scroll through them,  
26 but I think -- my understanding is that as of this week, and I don't know whether it's  
27 today or not, there is about 65 LRV minor deficiencies still open, and a lot of them are  
28 very minor. You know, in all fairness, a tamper-proof seal on a device on a train that is

1 locked inside the cabin, you know, it doesn't affect the service, but it is something that is  
2 required to be there. A number of these obviously require time, resources and access  
3 to the vehicles, and these were all supposed to have been closed by now.

4 As a result of the events that have occurred, whether it be cracked  
5 wheels, derailments, or whatever, an amount of time and effort that has been spent on  
6 working on the vehicles to make them more reliable and to get them through  
7 preventative and corrective maintenance, there is just not enough hours in the day or  
8 people on the job to be able to do all of that work and all of this work simultaneously.

9 So, things have to be prioritized, just purely based on what work  
10 has to occur in any 24-hour period. And you have to remember that Monday to Friday,  
11 the trains spend very, very little time actually in the workshop. They are mainly out on  
12 the guideway serving the public. There is not a lot of down time for this work to be  
13 done. So, it has taken or is taking longer than anybody ever envisaged. But a lot of  
14 that is because the resources have been diverted onto far more important things, still  
15 associated with the vehicles, that need to be addressed in a far more urgent manner.

16 **MR. JEAN-CLAUDE KILLEY:** Okay. Thank you. I am going to  
17 move onto another topic. Jacques Bergeron gave evidence earlier this week. One of  
18 the pieces of evidence he gave was that he was aware that the track that OLRTC had  
19 built had a gauge that was narrower than the specification required, he said up to minus  
20 six millimetres in some places. Do you know anything about that?

21 **MR. MATTHEW SLADE:** I do. So, that statement was true at a  
22 point in time, and I can't remember when. I want to say summer of 2018. It's all a long  
23 time ago for me. OLRTC at the time went through a campaign of correcting those areas  
24 of tight gauge. So, there's a couple of things that are important. Firstly, it wasn't the  
25 entire alignment, it was some distinct areas, predominantly to the east end of the job.  
26 And OLRTC spent extensive time adjusting that to within -- so at the time of going into  
27 revenue service, there was nothing at a tighter gauge than minus one millimetre, which  
28 met the maintenance tolerances for the track, as per the maintenance manual. And I

1 know that since then, obviously the track is now in operation and being maintained.  
2 And as far as I understand from track inspection reports from the maintenance team,  
3 there is no track for this type anywhere on the mainline. There might be some areas in  
4 the yard still, but there are no areas on the mainline that are tight in gauge anymore.

5 **MR. JEAN-CLAUDE KILLEY:** When you say "the yard", that's the  
6 MSF.

7 **MR. MATTHEW SLADE:** Correct. Belfast yard, yes.

8 **MR. JEAN-CLAUDE KILLEY:** Is track gauge static from the time  
9 you install it, or can it change over time?

10 **MR. MATTHEW SLADE:** It can change over time. It is more likely  
11 to change on the sections of track that are made up of ballast and ties. It is unlikely to  
12 change -- well, it will change everywhere through wear. Obviously, steel wheels running  
13 on steel rails, it wears. But I talked about track moving with temperature, et cetera,  
14 earlier. The tracks that are installed on what we call slab track with direct fixation, it's  
15 less likely. It shouldn't ever get narrower; it will only ever get wider as it wears. The  
16 ballasted track can, it can get narrower on a curve in hot weather and in cold weather,  
17 unless it's maintained properly. But certainly, the records to date don't show any areas  
18 of tight gauge on the mainline.

19 **MR. JEAN-CLAUDE KILLEY:** And from the evidence you just  
20 gave, I guess we can understand that it is also reparable if the gauge ---

21 **MR. MATTHEW SLADE:** Yes.

22 **MR. JEAN-CLAUDE KILLEY:** --- has changed?

23 **MR. MATTHEW SLADE:** Yes. You can adjust track gauge.

24 **MR. JEAN-CLAUDE KILLEY:** Okay. Those are all the questions I  
25 have for you, Mr. Slade. Thanks.

26 **MR. MATTHEW SLADE:** Thank you.

27 **COMMISSIONER HOURIGAN:** All right. Any re-examination?

28 **MS. CHRISTINE MAINVILLE:** No. No questions, Mr.

1 Commissioner.

2 **COMMISSIONER HOURIGAN:** Mr. Slade, thank you for coming.  
3 Thank you for testifying. It's been very helpful to the Commission. We appreciate your  
4 time. You are now excused. Thank you.

5 **MR. MATTHEW SLADE:** Thank you very much.

6 **COMMISSIONER HOURIGAN:** We have another witness coming  
7 up. So, we are going to just take a few minutes to get organized. We will be down for  
8 five or so minutes and then we will deal with our last witness of the day. Thank you.

9 **THE REGISTRAR:** All rise. The Commission will adjourn for five  
10 minutes.

11 -- Upon recessing at 2:45 p.m.

12 --- Upon resuming at 2:52 p.m.

13 **THE REGISTRAR:** Order. All rise. The Commission has  
14 resumed.

15 **COMMISSIONER HOURIGAN:** All right. Our final witness of the  
16 day is Yang Liu.

17 **MR. YANG LIU:** Yes.

18 **COMMISSIONER HOURIGAN:** All right. Mr. Liu, you can hear us  
19 all right?

20 **MR. YANG LIU:** Yes, I can hear you.

21 **COMMISSIONER HOURIGAN:** All right. You are going to be  
22 asked questions by a number of lawyers today, but before we do that you have a choice  
23 to either swear to tell the truth or make a solemn affirmation to tell the truth. Which  
24 would you prefer?

25 **MR. YANG LIU:** I can swear to tell the truth.

26 **COMMISSIONER HOURIGAN:** Okay. Stand by.

27 **--- MR. YANG LIU: Sworn**

28 **THE REGISTRAR:** The witness has been sworn in.

1                   **COMMISSIONER HOURIGAN:** All right. First is Commission  
2 counsel, Ms. Peddle.

3    **--- EXAMINATION IN-CHIEF BY MS. CARLY PEDDLE:**

4                   **MS. CARLY PEDDLE:** Good afternoon, Mr. Liu. My name is Carly  
5 Peddle, and I'm Commission counsel on the Ottawa Light Rail Transit Public Inquiry.  
6 Can you hear me okay?

7                   **MR. YANG LIU:** Yes, I can.

8                   **MS. CARLY PEDDLE:** So, to begin today, would you briefly  
9 summarize for the Commissioner your education and professional experience as it  
10 relates to your work on Ottawa's Light Rail Transit Project?

11                  **MR. YANG LIU:** Okay. My education was I have a Bachelor of  
12 Applied Science from the University of Waterloo. I have a Master of Science from the  
13 Swiss Federal Institute of Technology in Zurich. I'm a licenced professional engineer of  
14 Ontario. I have been in the train industry since 2010, working on various rail projects  
15 and in the rolling stock design side.

16                  I joined the Ottawa Light Rail Project in December of 2015, in the  
17 construction phase, as the test and commissioning manager for Alstom where I was  
18 responsible for the testing of the fleet. That included electrical testing in the production  
19 line, as well as serial testing at the end of the production line, as well as acceptance  
20 testing to present these trains to the City.

21                  I later moved to the maintenance project in May 2020 after a year  
22 away from the project from May 2019 to May 2020. And I joined the maintenance  
23 project in the role of project engineering manager for the maintenance scope where I  
24 led the team of engineers to be responsible for the engineering activities related to the  
25 maintenance of the trains, the track and the various infrastructure access that's under  
26 the -- Alstom's code.

27                  **MS. CARLY PEDDLE:** And you remain in that role today?

28                  **MR. YANG LIU:** I recently moved onto Ottawa within the same



1 company, with Alstom.

2 **MS. CARLY PEDDLE:** And prior to working on the Ottawa project,  
3 you had various roles with Bombardier?

4 **MR. YANG LIU:** Yes, with Bombardier Transportation.

5 **MS. CARLY PEDDLE:** So, you were working in the rolling stock in  
6 2010 as a systems engineer?

7 **MR. YANG LIU:** Yes, exactly.

8 **MS. CARLY PEDDLE:** And then in 2014, you came to Canada and  
9 worked for Bombardier as a consultant contractor for a year?

10 **MR. YANG LIU:** Exactly. On one specific project.

11 **MS. CARLY PEDDLE:** And then immediately after that, you joined  
12 the -- Alstom for this project?

13 **MR. YANG LIU:** Exactly.

14 **MS. CARLY PEDDLE:** So, first, I want to talk about your role as  
15 testing and commissioning manager for Alstom. So, you mentioned that you were  
16 responsible for the serial testing for all Stage 1 trains; is that right?

17 **MR. YANG LIU:** Yes.

18 **MS. CARLY PEDDLE:** And serial testing is used to ensure the  
19 train is functional?

20 **MR. YANG LIU:** Serial testing is basically, you know, factory  
21 acceptance testing. That means that every train as it comes off of the production line,  
22 it's a dead train more or less and in serial -- for serial testing, we analyze the train. We  
23 bring up the various functions; we load the software to ensure the train is leaving serial  
24 testing as a finished product.

25 **MS. CARLY PEDDLE:** Now, could you please just distinguish that  
26 from validation testing?

27 **MR. YANG LIU:** Sure. So, validation testing is engineering-related  
28 testing. It's normally done on the first two prototypes or first two units of the feed to

1 prove the engineering design, to validate that everything is working as per the design  
2 intent. Serial testing is after validation testing. So, after validation is done normally,  
3 then your design is proven to be okay, after which point all of the fleet are manufactured  
4 according to that design, and then serial testing is simply to ensure that every train is  
5 built to the validated design.

6 **MS. CARLY PEDDLE:** Thank you. Now, you mentioned that it's --  
7 validation testing should occur before serial testing; why is that?

8 **MR. YANG LIU:** Because the design needs to be finalized. It's a --  
9 with any product, you need the design to be fully -- to be mature enough that you can  
10 build that design onto every train or any other product. So, essentially, you do need to  
11 validate the design first before you can build to it.

12 **MS. CARLY PEDDLE:** And what problems, if any, arise from not  
13 conducting validation testing before serial testing?

14 **MR. YANG LIU:** So, in our project, yes, we -- it was more or less  
15 going on in parallel. We had validation testing and serial testing going on in parallel.

16 **MS. CARLY PEDDLE:** And ---

17 **MR. YANG LIU:** And so --

18 **MS. CARLY PEDDLE:** --- what are the consequences of that?

19 **MR. YANG LIU:** Yes. So, the consequences, you have to deal  
20 with changes because as you're validating the functions, there could be changes  
21 introduced to the design. And as you have built the serial trains already, you would  
22 have to incorporate these design changes into your trains as they're in the  
23 manufacturing process.

24 **MS. CARLY PEDDLE:** And when you're incorporating these  
25 design changes, is that retrofitting?

26 **MR. YANG LIU:** Yes, that's retrofitting.

27 **MS. CARLY PEDDLE:** And I'm correct that after retrofitting, then  
28 the vehicle would have to go through another series of testing, non-regression testing?

1                   **MR. YANG LIU:** Exactly. Correct. Yes.

2                   **MS. CARLY PEDDLE:** And does that create any risks for the  
3 reliability of the vehicle?

4                   **MR. YANG LIU:** It can. It can.

5                   **MS. CARLY PEDDLE:** And why is that?

6                   **MR. YANG LIU:** Because, you know, if it was an ideal situation,  
7 every train would come off the production line in its final state. We do one round of  
8 testing and that's it. When we do retrofits, especially, you know, complex retrofits  
9 involve a lot of wiring changes. You introduce new elements to a product that you have  
10 already essentially tested. So to address that, we have to define non-regression  
11 testing, which means to prove that function in the regress or if any existing testing  
12 functions did not show any regression. So after every batch-up change you needed to  
13 redo certain tests to ensure that the trains are still at the fully updated design.

14                   **MS. CARLY PEDDLE:** And am I right that even despite that non-  
15 regression testing, that any kind of retrofit adds risk to the reliability of the vehicle?

16                   **MR. YANG LIU:** Yes, I guess – in my opinion it does but you have  
17 to mitigate this risk with the non-regression testing.

18                   **MS. CARLY PEDDLE:** Sir, you just mentioned that validation  
19 testing did not occur before serial testing this project; it occurred in parallel?

20                   **MR. YANG LIU:** Yes.

21                   **MS. CARLY PEDDLE:** Was that the plan on arrival?

22                   **MR. YANG LIU:** So when I joined the project, that was already the  
23 plan. I don't think that was the plan at the beginning of conception of the project. Let  
24 me put it that way - but when I arrived in 2015 basically the schedule was already  
25 squeezed. We didn't have time to wait for it, but the year in between validation and start  
26 of serial production, so more or less it was accepted. It was told to me that, okay, we're  
27 probably going to have to do both.

28                   **MS. CARLY PEDDLE:** And the compression to this schedule that

1 you've just mentioned, or the fact that the schedule was squeezed, why was that?

2 **MR. YANG LIU:** I mean I think the start of the service, it was an  
3 altered milestone. We had to meet that date, at that time, which was on the 18<sup>th</sup>. And  
4 then for whatever reasons that I'm not fully aware of, we were already, you know, quite  
5 late in that stage in 2015. So we had to revise the – there was no time to do a detailed  
6 validation campaign and then increment the design changes to the design and then  
7 start serial testing.

8 **MS. CARLY PEDDLE:** Mr. Liu, you mentioned three things in your  
9 interview with Commission counsel that you said you believe contributed to the  
10 compression of the testing schedule, and that was unstable design – and I think you've  
11 just mentioned that – lack of access to the light maintenance bay and lack of access to  
12 the test track; do you remember that?

13 **MR. YANG LIU:** Those were all issues that resulted – shall we  
14 say, that actually delayed our process to test the trains in the suitable amount of time.  
15 Yes, I remember that and I still stand by that.

16 **MS. CARLY PEDDLE:** And, sorry, just to clarify it; so those  
17 resulted in delayed testing but is it your evidence that those did not actually cause the  
18 squeezing of the schedule?

19 **MR. YANG LIU:** So what I wanted – what I meant to say was that  
20 by the original idea – and I think when we started this project the idea was to finish  
21 validation testing, implement the design changes and then do the serial collection and  
22 then serial testing, which, you know – why all the non-regression or the retrofits  
23 associated with validation, but by the time I arrived in December 2015, that has  
24 changed. So the plan has already changed from doing that to doing validation and  
25 serial testing parallel.

26 But even that, we went ahead with that plan, but still we had issues  
27 all along the way of validation and serial testing.

28 **MS. CARLY PEDDLE:** Thank you for that clarification. I first do

1 just want to talk about design and stability; you mentioned in your interview with  
2 Commission counsel that Alstom would receive new design schematics frequently. Do  
3 you remember that?

4 **MR. YANG LIU:** Yes.

5 **MS. CARLY PEDDLE:** And I understand that as a result you  
6 adapted the testing program to the schematics?

7 **MR. YANG LIU:** Yes.

8 **MS. CARLY PEDDLE:** And what does that mean; can you explain  
9 that a little bit more?

10 **MR. YANG LIU:** Yes. So schematics, the electrical schematics I  
11 was referring to basically shows how the different subsystems and equipment on the  
12 train are wired together. Because we do have a fully electric train.

13 As part of the validation there would be new changes to, for  
14 example, which pins and connectors the wires are run to. And that, of course, came  
15 from findings during validations to say, okay, we need this function now; it doesn't work  
16 like we specified it; so we need to change that wire to a different place.

17 And then because of that change in the designing, a new schematic  
18 has to be released to show, okay, now we're wiring it this way. Afterwards we would  
19 have to change the serial test procedure to show that, okay, we're going to test it like  
20 that based on the new schematics.

21 **MS. CARLY PEDDLE:** What were the consequences of design  
22 and stability? And I think you did mention retrofits. So I just want to – is that the  
23 primary consequence of this design and stability?

24 **MR. YANG LIU:** So the design kept changing; we kept doing  
25 retrofits and kept doing non-regression testing. And that sort of, you know, went all the  
26 way until pretty much – I want to say I can't build until 2019. And the impact of design  
27 stability, at least in the production phase, was that you had to redo a lot of the testing.  
28 So any time, you know, any time that we save by doing things in parallel, we would

1 have to do a lot of extra work to essentially bring the trains back into the testing area to  
2 redo part of the serial test, or sometimes large portions of the serial test, and that was  
3 the main part.

4 **MS. CARLY PEDDLE:** So it would be fair to say that it's more  
5 resource-intensive for Alstom?

6 **MR. YANG LIU:** Yes.

7 **MS. CARLY PEDDLE:** And less efficient?

8 **MR. YANG LIU:** Absolutely, less efficient.

9 **MS. CARLY PEDDLE:** Okay. Mr. Liu, the second thing you spoke  
10 of in your interview with Commission counsel that caused delay in serial testing, was the  
11 unavailability of the light maintenance bay; do you remember that?

12 **MR. YANG LIU:** Yes.

13 **MS. CARLY PEDDLE:** And I understand that static testing was to  
14 be completed in the light maintenance bay on the project?

15 **MR. YANG LIU:** Yes.

16 **MS. CARLY PEDDLE:** Let me just ask this first, when did you  
17 expect to gain access to the light maintenance bay?

18 **MR. YANG LIU:** I think I expected to get it when the building was  
19 first handed over.

20 **MS. CARLY PEDDLE:** And when was that?

21 **MR. YANG LIU:** Before I joined, I think.

22 **MS. CARLY PEDDLE:** And when did you gain access to the light  
23 maintenance bay?

24 **MR. YANG LIU:** It was 2016, sometime in August, if I recall  
25 correctly.

26 **MS. CARLY PEDDLE:** And at that time what you received, was it  
27 what you expected to receive?

28 **MR. YANG LIU:** No, because it wasn't powered. So the whole

1 point of the light maintenance bay was that it needs to be in an area with 1.5 kilowatts,  
2 which is what the train needs in proportion of the auxiliary systems. So essentially when  
3 we first got to that area it was unpowered; it was more ---

4 **MS. CARLY PEDDLE:** And so I take that Alstom couldn't perform  
5 the test that required power?

6 **MR. YANG LIU:** No.

7 **MS. CARLY PEDDLE:** At that time did Alstom have any sense of  
8 how they would get access to a powered light maintenance bay?

9 **MR. YANG LIU:** It was -- there was a shift in schedule. We were  
10 -- I knew that the OLRT was working very hard to get this power; they do recognize that.  
11 That was the main deficiency at that point. And that was the main deficiency at that  
12 point. But I think it was a couple months after we moved into the bay where we got  
13 power to one area, one quadrant, shall we say.

14 **MS. CARLY PEDDLE:** But not power to the entire ---

15 **MR. YANG LIU:** No. No, it was only what we call the shock power.  
16 It was not the OCS, the overhead catenary, which would be the ideal power source, but  
17 it was a short supply. So, another power source that is very helpful, but it doesn't allow  
18 us to perform the full suite of tests.

19 **MS. CARLY PEDDLE:** And am I correct that you shared the light  
20 maintenance bay for its use in validation testing? So, it was being used for both serial  
21 and validation testing?

22 **MR. YANG LIU:** Yes. For the majority of the period in the  
23 construction phase, we shared the bay.

24 **MS. CARLY PEDDLE:** Did that have any impact on your ability to  
25 conduct serial testing?

26 **MR. YANG LIU:** Yes. So, space constraints, fighting for space in  
27 the powered area was a big challenge for us. We had validation testing ongoing,  
28 sometimes not with only one train, but two trains validation testing. And, keep in mind,

1 the bay only -- you can fit four trains in there. So, if you fit the two trains for validation,  
2 then you only have two spots left, and sometimes we were supposed to test four trains  
3 in parallel in the serial test.

4 So, we had to shuffle around the trains, you know, quite a lot, move  
5 the trains in and out, depending on what they are doing. As well, the bay, there is an  
6 issue that -- okay, so if you energize or if you are doing energized testing on one train,  
7 high voltage is applied to the area, and you cannot access the roof of the adjacent bay.  
8 So, if validation was testing -- was high voltage, we would lose access to the roof on the  
9 adjacent bay when we were doing serial testing. A lot of conflicts in that sense, yes.

10 **MS. CARLY PEDDLE:** And so, I take it that would also cause  
11 inefficiencies in completing the serial testing?

12 **MR. YANG LIU:** Yes.

13 **MS. CARLY PEDDLE:** And I understand from your interview with  
14 Commission counsel that even after Alstom was granted access to the light  
15 maintenance bay, that serial testing continued to be delayed due to continued power  
16 issues?

17 **MR. YANG LIU:** Yes. Power interruptions was a significant  
18 problem for us, because without power, the bays are essentially storage spaces. There  
19 were issues with the -- we call it the stinger system, which is the auxiliary plug that I just  
20 mentioned a bit earlier. Basically, you know, it's a connector that plugs into the train,  
21 you get kilowatts. Looking back now, we can clearly see that it was a design issue. It  
22 was the power supply to that connector, the convectors and the infrastructure system  
23 was not adequate, you know, to supply the train. Sometimes the train would be okay  
24 and then suddenly we would lose power and it seems that the fuse on the infrastructure  
25 had blown. There was also a fire in the cabinet that took down the whole system, the  
26 whole auxiliary supply system for a couple months, or half a year. I recall it was half a  
27 year, or maybe a bit longer. So, we couldn't test with that short supply for a long time.

28 OCS was a little bit better. It was more or less stable, but there



1 was also periods of time where the OCS would go down as well. That would extremely  
2 delay our testing progress.

3 **MS. CARLY PEDDLE:** And you just said that it was clearly a  
4 design issue, and that the infrastructure was inadequate. What is the basis for that  
5 belief?

6 **MR. YANG LIU:** Looking at it now, at that time, I had no access to  
7 the design. I didn't know it. I was simply saying why does the fuse keep blowing on the  
8 infrastructure when everything on the train is okay? So, looking back at it now, I think it  
9 was a bit underrated. So, the electrical contractor that supplied the maintenance base  
10 was undersized, and in fact, after the fire happened, the whole assembly was changed  
11 to a more robust system.

12 **MS. CARLY PEDDLE:** When did these power issues occur?  
13 During what period?

14 **MR. YANG LIU:** Throughout the testing period, from when we first  
15 entered the bay to towards the end of assembly.

16 **MS. CARLY PEDDLE:** So, from, you said, August 2016 until  
17 2019?

18 **MR. YANG LIU:** Yes.

19 **MS. CARLY PEDDLE:** So, a period of nearly three years?

20 **MR. YANG LIU:** Yes.

21 **MS. CARLY PEDDLE:** And you mentioned that a solution was  
22 implemented, in that the power was changed, so it wasn't undersized. Whose  
23 responsibility was that?

24 **MR. YANG LIU:** At that time, it was OLRT.

25 **MS. CARLY PEDDLE:** The constructor, OLRTC?

26 **MR. YANG LIU:** OLRTC, yes. OLRTC.

27 **MS. CARLY PEDDLE:** And do I understand correctly that Alstom  
28 created some workarounds without the light maintenance bay to conduct serial testing?

1                   **MR. YANG LIU:** It was not really possible to do workaround  
2 without the light maintenance bay, but we were able to make workarounds, for example,  
3 with only the OCS, without the shop supply.

4                   **MS. CARLY PEDDLE:** Did that have any impact on your ability to  
5 test?

6                   **MR. YANG LIU:** Yes. You basically -- with the shop supply, the  
7 difference between the shop supply and the overhead cabin areas is mainly that if you  
8 use the shop supply, you still have roof access. You could be on the roof of the train.  
9 Whereas if you were testing on OCS, nobody can be allowed to be on the platforms on  
10 the train.

11                   So, we created workarounds that basically tested the functions of  
12 the equipment that we needed to, but we had to, you know, figure out different ways to  
13 do it because, you know, you cannot stand there anymore. New equipment was being  
14 bought that fit our purpose. And, you know, it caused, certainly, some thinking on our  
15 side of, how do we do these tests now?

16                   **MS. CARLY PEDDLE:** So, again, it caused some inefficiencies?

17                   **MR. YANG LIU:** Inefficiencies, yes.

18                   **MS. CARLY PEDDLE:** And was more resource intensive?

19                   **MR. YANG LIU:** Resource intensive, as well as scheduling  
20 became hard because you no longer -- you lost also the roof access of the adjacent  
21 bay, because you energized the whole track.

22                   **MS. CARLY PEDDLE:** Okay. The third thing that you mentioned  
23 in your interview with Commission counsel as creating pressure or delaying serial  
24 testing was the unavailability of the test track. Do you remember that?

25                   **MR. YANG LIU:** Yes.

26                   **MS. CARLY PEDDLE:** And am I correct that the test track is used  
27 for dynamic tests during serial testing?

28                   **MR. YANG LIU:** Yes.

1                   **MS. CARLY PEDDLE:** Alstom's subcontract provided that Alstom  
2 was to be given use and access to the test track on a certain schedule; is that correct?

3                   **MR. YANG LIU:** Yes, I think so.

4                   **MS. CARLY PEDDLE:** And was that schedule met?

5                   **MR. YANG LIU:** No.

6                   **MS. CARLY PEDDLE:** Do you understand that the schedule was  
7 met?

8                   **MR. YANG LIU:** I don't think it was met. I don't recall the exact  
9 dates, but I know that we were given it much -- very late. Originally, 3.5 kilometres of  
10 test track, I don't remember the date, but we were really waiting for the test track with  
11 the trains, especially the first train that was supposed to do validation. It needed to go  
12 to the test track, but we didn't have it.

13                   **MS. CARLY PEDDLE:** Do you recall when you did receive the test  
14 track?

15                   **MR. YANG LIU:** Yes. It was around November 2016.

16                   **MS. CARLY PEDDLE:** And was the track as you had expected to  
17 receive? Was it consistent with what you expected?

18                   **MR. YANG LIU:** Well, I think, personally, I expected, for validation  
19 purposes, a much larger test track. Because we were given only the stretch between  
20 Sorrel and Blair eastbound. So, basically, it was one track for one kilometre, or  
21 something like that. Whereas, you know, for serial testing maybe we could have done it  
22 because we don't need to do a lot of dynamic testing, but for validation testing where  
23 you need to go round and round, you know, the test track for days at a time, I think it  
24 was not -- maybe not efficient.

25                   **MS. CARLY PEDDLE:** Did you raise those concerns with anyone?

26                   **MR. YANG LIU:** Maybe informally with -- because I'm not in  
27 charge of validation. There's a different validation team with a validation manager.

28                   **MS. CARLY PEDDLE:** After the test track was completed, were

1 you given reasonable access to perform testing on it?

2 **MR. YANG LIU:** So after the test track was given to us, there was  
3 only, you know, one stretch, you can only fit one train on the test track at any time. It  
4 became a struggle between serial testing and validation testing, to have access to the  
5 test track. Validation testing would need the test track for extended periods of time.  
6 Whereas, as part of the serial test program, every train at the end of the static test  
7 needed to do a dynamic test. So it needed to go the main, so we -- it was again delays  
8 and inefficiencies.

9 At a certain point, we were forced to do dynamic testing in the MSF,  
10 and it was not ideal because we could only achieve speeds up to 15 kilometres per  
11 hour, we had to put spotters everywhere to ensure that the safety was ---

12 **MS. CARLY PEDDLE:** Did you say 15 or 50 kilometres an hour?

13 **MR. YANG LIU:** Fifteen (15), 1-5. And then for the -- I mean, and  
14 that didn't even help, because afterwards we still needed, you know, as part of the final  
15 acceptance with the City, we still needed to put these trains onto the test track. So we  
16 essentially added a new light dynamic test just for the purpose of proof of concept.

17 **MS. CARLY PEDDLE:** Mr. Liu, when you left the project in May  
18 2019, what was the status of serial testing?

19 **MR. YANG LIU:** Serial testing was pretty much completed. We  
20 walked through all the non-aggression testing because of the -- all the changes that  
21 were happening. And even so, I think it was nearing completion. The major retrofits  
22 have all been done and we've done the non-aggression test for most of it. There were  
23 some bits and pieces to that but was not that significant.

24 **MS. CARLY PEDDLE:** What was your view as to the readiness of  
25 the trains when you left in May 2019? Were the trains where they should be with the  
26 schedule?

27 **MR. YANG LIU:** They were all pretty much tested to the validated  
28 design. I don't think there was much gaps in that, okay, we had many functionalities

1 that were still unproven or huge retrofits that were happening. I think, at that time, I did  
2 feel pretty good about the trains. They were running on the test track, and we didn't  
3 have -- the systems were relatively stable at that time. There was -- the Thales  
4 interface was still -- that was actually I think the biggest retrofit that the interface with the  
5 -- with system. There were still changes pending for that. For example, I noted that the  
6 on manual change was not done, so the trains couldn't have -- couldn't operate  
7 unmanned. That was one of the more notable functions. So in terms of other things, it  
8 was pretty good.

9 **MS. CARLY PEDDLE:** So we touched on this briefly at the  
10 beginning of your testimony today, but am I right that late testing and the parallel serial  
11 and validation testing essentially means that modifications were discovered later?

12 **MR. YANG LIU:** Yes.

13 **MS. CARLY PEDDLE:** And that's a problem because -- and I'll just  
14 quote you from your interview with Commission Counsel, that every time you touch the  
15 train, you're introducing new potential points for failure. Is that right?

16 **MR. YANG LIU:** That's right.

17 **MS. CARLY PEDDLE:** And so even though non-regression testing  
18 is done to ensure that it's functioning, it's -- there's just a higher likelihood that there'll be  
19 issues; is that correct?

20 **MR. YANG LIU:** Yes, and I can explain a little bit more. So if a  
21 design change was made only to one wire, shall we say, let's assume there's a very  
22 minor change, but to be able to do that change, sometimes you need to do an entire  
23 panel on a train, and that involved disconnecting and connecting many connectors. And  
24 when the panel's put back, you know, you are -- we are not simply going to test that one  
25 wire. We now have to test all the functions involved and all the functions, you know,  
26 that's going through that panel. So anything that could have been touched or anything  
27 that could have been, you know, modified or, shall we say, any functions that go  
28 through those connectors to that panel now need to be tested again to make sure that

1 there's no regression to the functionality.

2 **MS. CARLY PEDDLE:** Thank you.

3 **MR. YANG LIU:** So it's really an exponential increase, you know,  
4 in the work load because you -- everything has been tested before it was functional, and  
5 then after you do a retrofit, you have to test many functions.

6 **MS. CARLY PEDDLE:** Just switching topics now, Mr. Liu, you're  
7 aware of the various breakdowns and derailments on the Confederation line after  
8 revenue service?

9 **MR. YANG LIU:** Yes.

10 **MS. CARLY PEDDLE:** And you mentioned in your Commission  
11 interview that you were confident in the quality of testing that was done.

12 **MR. YANG LIU:** Yes.

13 **MS. CARLY PEDDLE:** Knowing what you know now, that there  
14 were these breakdowns and derailments, do you still remain confident in the quality of  
15 Alstom's testing?

16 **MR. YANG LIU:** Yes, and I can tell you why, because the -- none  
17 of these breakdowns or derailment happened because of an issue that, you know,  
18 happened in testing, or an issue with the construction of the train that should have been  
19 caught. Really, all the analysis and the work so far into all of these breakdowns were  
20 due to issues that you couldn't have caught in serial tests.

21 **MS. CARLY PEDDLE:** So let me just make sure I got your  
22 evidence on that last point. You're saying that the breakdowns and derailments, the  
23 issues that the trains were experiencing, those would not have been caught in serial  
24 testing?

25 **MR. YANG LIU:** Yes.

26 **MS. CARLY PEDDLE:** So first, Mr. Liu, I'd like to discuss the  
27 power issues that line 1 experienced after revenue service and through the winter of  
28 2020. You're aware of those issues?

1                   **MR. YANG LIU:** Which ones are you referring to?

2                   **MS. CARLY PEDDLE:** The overhead catenary system.

3                   **MR. YANG LIU:** Okay.

4                   **MS. CARLY PEDDLE:** And ---

5                   **MR. YANG LIU:** I'm aware of that, but I wasn't there actually when  
6 they happened, because the -- for the period between May 2019 and May 2020, I was  
7 actually away from the project.

8                   **MS. CARLY PEDDLE:** Or when you rejoined the project, are you  
9 aware of any of Alstom's analysis of the issue in terms of what the root cause was?

10                  **MR. YANG LIU:** For the whole CS?

11                  **MS. CARLY PEDDLE:** Yes.

12                  **MR. YANG LIU:** Yes, so when I rejoined the project, I knew that  
13 we had sent an expert from Mexico, Alstom Mexico to come to Canada to do a survey  
14 and an audit of the line. This was around I think December, January -- December 2019  
15 and January 2020, around that timeframe. And he has made a list of observations and  
16 basically recommendations based on what he has seen.

17                  **MS. CARLY PEDDLE:** Okay. And what was the cause of these  
18 issues, as you understand it?

19                  **MR. YANG LIU:** I mean, there was some issues with the wire, with  
20 the OOCs in the tunnel not having enough stagger. So by that I mean, normally the  
21 wire, the wire catenary would be wired in a zigzag form, so that you -- you know, it's an  
22 interface -- a piece of interface between the train and the infrastructure. And it's subject  
23 to wear because it constantly, you know, rubs against the pantograph as the  
24 pantograph is moving, as the train's moving. So normally you want to make it in a  
25 zigzag fashion, so you don't wear in the same spot on the pantograph. But in a tunnel,  
26 for example, there was no zigzag, so one of the recommendations was to introduce  
27 more zigzag in the tunnel. Others were including how to -- certain ground connections  
28 when we see in the traction power substations, for example.

1                   **MS. CARLY PEDDLE:** And I'm also right that there were some  
2 issues with the line inductors around the same time?

3                   **MR. YANG LIU:** Line inductors though are not about CS. The line  
4 inductors are part of the traction equipment on the train. Yes ---

5                   **MS. CARLY PEDDLE:** And they -- I'm sorry. Let me allow you to  
6 finish your answer.

7                   **MR. YANG LIU:** Yes, I'm aware of the line inductor issues. I didn't  
8 experience them, but after I joined, I learned that that was actually one of the main  
9 issues affecting fleet availability in the winter.

10                  **MS. CARLY PEDDLE:** In the winter of? And that would be the  
11 winter of 2020?

12                  **MR. YANG LIU:** The winter of, yes, 2019-2020.

13                  **MS. CARLY PEDDLE:** Am I correct that the cause of the issues  
14 with the inductors, was that there was pollution from carbon dust and debris?

15                  **MR. YANG LIU:** Yes. Basically, the line inductor is in a box on top  
16 of the train that has a vent on top. And the root cause analysis done basically showed  
17 that carbon dust deposits, combined with, I think, salt, salt water, presumably from  
18 overpass during winter where they're removing snow -- sorry, salting for ice melting, and  
19 that degraded the insulation strength of the equipment. So, that made its way into the  
20 equipment box and caused short circuits inside the line inductor.

21                  **MS. CARLY PEDDLE:** Why was this pollution carbon dust debris  
22 not caught by Alstom's preventative maintenance?

23                  **MR. YANG LIU:** I think in the first winter, the inspection, you know,  
24 doesn't really call for -- sorry, the preventative maintenance inspection does not involve  
25 examining that piece of equipment on a very routine basis. So, the fact that it happened  
26 three months into revenue service, I think nobody would have inspected back then.

27                         What did happen was after it did happen, we added all sorts of  
28 mitigations into the preventive maintenance, including checking it before and after every



1 winter, cleaning it. So, it was more because of experience that was added to the  
2 preventive maintenance.

3 **MS. CARLY PEDDLE:** And the solution was also that the covers of  
4 the line inductors were changed?

5 **MR. YANG LIU:** Yes. Simple fix. It was just to ensure that it  
6 doesn't -- that deposits don't come as easily.

7 **MS. CARLY PEDDLE:** And since those solutions were  
8 implemented, more preventative maintenance, the new covers, have the line inductor  
9 issues continued?

10 **MR. YANG LIU:** No. Since I joined, I actually haven't seen any --  
11 don't recall seeing a line inductor failure.

12 **MS. CARLY PEDDLE:** Mr. Liu, now I want to talk about door  
13 faults. I understand that door faults occurred during the testing phase of the vehicle, but  
14 also the system experienced numerous door faults after revenue service in the fall of  
15 2019. Is that your understanding as well?

16 **MR. YANG LIU:** Yes.

17 **MS. CARLY PEDDLE:** Did Alstom do an analysis of what caused  
18 the door fault issues?

19 **MR. YANG LIU:** I mean, I can speak to this in my role of test and  
20 commissioning manager ---

21 **MS. CARLY PEDDLE:** Yes, please.

22 **MR. YANG LIU:** --- because in the testing phase, the doors, you  
23 know, would frequently have issues when they come into the serial test, whereas it was  
24 very strange for us because as part of the installation of the door, it requires the testing  
25 of the opening and closing to ensure that the functionality was okay before it even  
26 reaches test.

27 So, it was strange for us to see a large number of door faults after  
28 trains essentially having been coupled together. And what we found out was that, as

1 the process or raising, as lifting and unlifting the cars during the assembly process, the  
2 doors could have seen -- you know, could become out of adjustment. So, essentially,  
3 you would have to redo door adjustments while the train is in working test.

4 And after revenue service, I know that there were a lot of door  
5 faults, but at that time, it wouldn't have been myself to take the lead in resolving those  
6 issues. It would have been the -- well, I wasn't here, first of all, in that year. So, it would  
7 have been the rolling stock team at that time, the engineering team, to look at the root  
8 cause and come up with the solutions.

9 **MS. CARLY PEDDLE:** Can you tell the Commissioner what the  
10 solutions were that Alstom implemented?

11 **MR. YANG LIU:** I know there were retrofits done on these doors  
12 after revenue service. I don't know the details of the retrofits because it was not done  
13 under the maintenance project.

14 **MS. CARLY PEDDLE:** And you didn't actually join the project  
15 again until May 2020, so this was before your time?

16 **MR. YANG LIU:** Yes.

17 **MS. CARLY PEDDLE:** I do understand, however, that door faults  
18 continue to occur on the line; is that right?

19 **MR. YANG LIU:** That's correct.

20 **MS. CARLY PEDDLE:** And, Mr. Liu, can you just explain why that  
21 is the case?

22 **MR. YANG LIU:** I think door faults are perhaps among the top  
23 three or five issues with any fleet around the world. It's just -- so the system is prone to  
24 issues. Right now, on the Ottawa fleet, during the maintenance phase, the doors -- I  
25 mean, when door faults happen, it is normally due to adjustments needed on various  
26 parts of the door. Simply, a technician has to go there and adjust, tune the door so that  
27 it fits better mechanically, and then the door is fine. So, I think it is wear and tear right  
28 now that is more or less causing the doors to become out of adjustment.

1                   **MS. CARLY PEDDLE:** Thank you. So, moving on to some issues  
2 with the wheels that I understood occurred shortly after you rejoined the project in May  
3 2020. So, first, I just want to talk about cracked wheels. Am I right that cracked wheels  
4 were discovered on vehicles in the summer of 2020?

5                   **MR. YANG LIU:** Yes.

6                   **MS. CARLY PEDDLE:** The Transportation Safety Board  
7 investigated the incident, right?

8                   **MR. YANG LIU:** Yes.

9                   **MS. CARLY PEDDLE:** And a total of four bogies were discovered  
10 with cracked wheels initially?

11                  **MR. YANG LIU:** Yes, I believe so.

12                  **MS. CARLY PEDDLE:** And then between July and August 2020, a  
13 total of eight cracked wheels were discovered?

14                  **MR. YANG LIU:** Yes.

15                  **MS. CARLY PEDDLE:** What did Alstom do in response?

16                  **MR. YANG LIU:** So, we grounded the fleet, actually, when we  
17 realized that there was -- when we realized the issue. So, in an incident such as the  
18 cracked wheels or the derailment, in Alstom, we follow a problem-solving process based  
19 on the 8D problem solving process or 8D problem solving methodology, where we  
20 would gather the required expertise, not only from maintenance. So, in this case, we  
21 would get the expertise from the rolling stock design, we would get the centre of  
22 competence involved, in Le Creusot, France, and quality engineering. All the different  
23 functions would form a working group and we would -- by containment actions, we  
24 would identify actions to find the root cause and basically what we need to do to prevent  
25 future recurrence, so we followed this -- sort of this strategy.

26                         In this case, for the cracked wheels, so we grounded the fleet and  
27 Le Creusot our centre of competence who designed these bogies, basically issued a  
28 safety risk assessment saying, okay, every wheel needs to be inspected every day

1 based on their analysis of what we have seen, and their perception of the risk involved  
2 with operating these trains.

3 So, what we did was implement this check, I believe it was a large  
4 number -- many operators were hired to do this inspection where every train every day  
5 was stopped for a wheel crack inspection. There were other actions, for example, on  
6 how to -- okay, so we launched the containment about inspecting the wheels every day,  
7 but other actions such as how to identify if a wheel is safe or if it is affected by this  
8 failure. So, that inspection was launched. We identified green wheels and red wheels,  
9 basically, had strategies of dealing with all situations.

10 **MS. CARLY PEDDLE:** What do you mean by green wheels and  
11 red wheels?

12 **MR. YANG LIU:** So, basically, it was a term implemented to say,  
13 okay, whether a wheel could be at risk of cracking after the root cause investigation.

14 **MS. CARLY PEDDLE:** And that would be a red wheel?

15 **MR. YANG LIU:** Yes.

16 **MS. CARLY PEDDLE:** That would be a red wheel.

17 **MR. YANG LIU:** Yes.

18 **MS. CARLY PEDDLE:** What's the status of the wheels today?

19 **MR. YANG LIU:** I think they're fully green wheels today on the  
20 fleet.

21 **MS. CARLY PEDDLE:** When was that completed?

22 **MR. YANG LIU:** I'd say 2021. I think 2021, the fall, around that  
23 period, but, you know, I'm not -- I'm not responsible for actually overseeing that program  
24 so I cannot say that date with too much confidence.

25 **MS. CARLY PEDDLE:** Was it the rolling stock team or who is  
26 responsible for ---

27 **MR. YANG LIU:** It was the rolling stock team.

28 **MS. CARLY PEDDLE:** So the second wheel issue that occurred

1 around that time, I believe, is wheel flats; do you remember that?

2 **MR. YANG LIU:** Yes.

3 **MS. CARLY PEDDLE:** And wheel flats are just what they sound  
4 like, that instead of wheels being perfectly round, the wheels develop flat spots?

5 **MR. YANG LIU:** Yes, exactly.

6 **MS. CARLY PEDDLE:** And that causes noise and discomfort on  
7 the train?

8 **MR. YANG LIU:** Yes. You would hear a thumping noise as the  
9 train is traveling.

10 **MS. CARLY PEDDLE:** And when it's significant enough the train  
11 has to be taken out of service?

12 **MR. YANG LIU:** Yes.

13 **MS. CARLY PEDDLE:** I understand that Alstom undertakes an  
14 assessment of the wheel flats issue; am I right?

15 **MR. YANG LIU:** Yes.

16 **MS. CARLY PEDDLE:** And the wheel flats were determined to be  
17 related to issues with emergency braking?

18 **MR. YANG LIU:** Yes.

19 **MS. CARLY PEDDLE:** What were those issues specifically?

20 **MR. YANG LIU:** So the flat is – well, to start – so a flat spot is  
21 created when the wheels are not turning. So more or less they're sliding on the rail.  
22 There are different braking – there are different types of brakes on this train. So there  
23 are electric brakes – there's electric braking and mechanical braking. The electrical  
24 braking uses the moleculars to regenerate current back to the line. It's a much, shall we  
25 say, a softer brake. Whereas mechanical braking are really clamping on the brake pads  
26 to mechanical brake the train. But the emergency braking, we are applying a certain  
27 force to the brake pads such that the wheels, you know – it could be that the wheels are  
28 no longer turning. But because it's the emergency brake, there is no slide protection

1 that activates. And by that I mean that – in other types of mechanical brakes, when the  
2 train realizes that that wheel is no longer turning, it reduces the brake effort applied to  
3 that wheel so that the wheel begins to turn again. But in emergency braking, it's a  
4 safety brake. So the idea is brake the train the shortest distance possible so the wheels  
5 will not let go. And that has the tendency of creating flat spots.

6 **MS. CARLY PEDDLE:** So you mentioned sliding, the wheels  
7 sliding on the rails; am I also right that there was increased emergency braking from low  
8 rail adhesion?

9 **MR. YANG LIU:** No.

10 **MS. CARLY PEDDLE:** No?

11 Low – adhesion would cause sliding – slipping and sliding, but it is  
12 not really related between the emergency brake. The emergency brake could be  
13 caused by a lot of factors such as the driver can activate the emergency brake or the  
14 train equipment and can trigger the emergency brake if it deems the train to be in a  
15 situation that requires intervention. The CBTC system – sorry, the VOPC, “vehicle on  
16 board controller”, so the Thales system, could also trigger the emergency brake.

17 **MS. CARLY PEDDLE:** And we've just heard evidence that there  
18 was an issue regarding the availability of the wheel lathe in the maintenance and  
19 storage facility; is that right?

20 **MR. YANG LIU:** Yes.

21 **MS. CARLY PEDDLE:** Did that, in your view, contribute to the  
22 number of frequency of wheel flats that the Line 1 experienced?

23 **MR. YANG LIU:** Well, I think that really contributed to the lack of  
24 availability of trains after wheel flats. Because you had basically a queue of trains waiting  
25 to enter the wheel lathe to get rid of the flats. But the wheel lathe doesn't cause the  
26 flats.

27 **MS. CARLY PEDDLE:** And Alstom – the wheel lathe isn't used as  
28 preventative maintenance to prevent wheel flats?

1                   **MR. YANG LIU:** It is; it is. So the wheel lathe was not – it's used  
2 in preventative maintenance because every 30,000 kilometres a train would need to go  
3 into the wheel lathe to get the wheel profile – the wheel profile to the nominal profile so  
4 that we maintained a good interface with the brake. It's also used to correct issues such  
5 as flat wheels.

6                   **MS. CARLY PEDDLE:** And am I right then, that the wheels had  
7 not reached the point where Alstom needed to use the wheel lathe on them for  
8 preventative maintenance when these wheel flats occur?

9                   **MR. YANG LIU:** Yes, because you can't really wait any more.  
10 When the wheel flats happen, we have a clear criteria of what's acceptable and what's  
11 not acceptable. Any wheel flat that's not acceptable needs to be corrected immediately  
12 before the train can be used again.

13                  **MS. CARLY PEDDLE:** What solutions did Alstom identify as  
14 short-term mitigation strategies?

15                  **MR. YANG LIU:** For the wheel flats?

16                  **MS. CARLY PEDDLE:** Yes.

17                  **MR. YANG LIU:** So there was a joint working group formed to  
18 look at the wheel flats issue in I think 2020, the winter – so winter 2019, 2020. And that  
19 working group came with many recommendations which, looking back, I think were all  
20 valid, such as reducing the sensitivity of the GID system, by the intrusion of the GID  
21 system that was activating too frequently sometimes during snow. So that sensitivity  
22 was reduced. As well, we worked with the City to implement a reduced braking rate.  
23 So the brake rate in the winter was a big cause for the wheel flats because the  
24 difference between the rail and wheel, steel on steel, is reduced in the winter time when  
25 the weather is cold and we have rain more or snow. So if we reduce the brake rate,  
26 then the trains have a tendency, a lower tendency to go into a state where they're over-  
27 speeding essentially and needs to be stopped by the emergency brake. There were  
28 other mitigation factors in there as well and over time we have implemented those and

1 in the last winter the number of wheel flats actually – we can see a noticeable  
2 improvement.

3 **MS. CARLY PEDDLE:** Thank you.

4 Now, I would like to move on to the issue of track buckling. Do you  
5 recall that in May and June of 2020 that the track on Line 1 buckled?

6 **MR. YANG LIU:** Yes.

7 **MS. CARLY PEDDLE:** And buckled sections of the track had to  
8 be taken out of service for repair?

9 **MR. YANG LIU:** Normally we would do a train speed restriction  
10 first, so a TSR first, and depending on the severity we would take the track out of  
11 service.

12 **MS. CARLY PEDDLE:** And in May and June of 2020 was the  
13 track taken out of service?

14 **MR. YANG LIU:** I don't recall having taken large sections of the  
15 track out of service.

16 **MS. CARLY PEDDLE:** And the track buckling issues were  
17 focused on the curve of the track?

18 **MR. YANG LIU:** Yes, so the track buckles really only – mainly in  
19 the balis track sections; so where you have the balis around the ties. And it mainly  
20 occurs – they would tend to take more stress under the heat.

21 **MS. CARLY PEDDLE:** You mentioned in your interview with  
22 Commission counsel that you believed this was caused by a combination of the  
23 temperature of the track being incorrect for the environment and that too much steel  
24 was used in the rail; do you recall that?

25 **MR. YANG LIU:** Yes. But I think what I mean to say was ....

26 **MR. YANG LIU:** Yes, but I think what I meant to say was, it wasn't  
27 that the temperature was too low on the track, but rather, when we laid the track in,  
28 there is a stress-free temperature where at that temperature, the track wouldn't



1 experience any stress. I think the temperature ---

2 **MS. CARLY PEDDLE:** And -- oh, I'm sorry. Go ahead.

3 **MR. YANG LIU:** I think that temperature was a bit low.

4 **MS. CARLY PEDDLE:** And by that, are you referring to the rail  
5 neutral temperature?

6 **MR. YANG LIU:** Yes. I am not a track expert so these terms that I  
7 am using could be not the ideal ones, yes.

8 **MS. CARLY PEDDLE:** And you said that you thought that the  
9 temperature was too low. What impact would that have?

10 **MR. YANG LIU:** So, this is based on my discussions with my track  
11 expert on my team. So, basically, if the track -- if the neutral temperature is below, that  
12 means when the temperature exceeds that neutral temperature, your steel will expand  
13 and that will introduce stress to your tracks, to your rails. In the sections of track where  
14 it is on, you know, it is on concrete, the tracks can't move, whereas on the sections of  
15 the track where it's ballasted, the ties, the stress experienced by the rails will be  
16 transferred onto the ties, and if the ballast is not firm enough, then your rails will move.

17 **MS. CARLY PEDDLE:** So, essentially, it can cause additional  
18 forces pulling on the track?

19 **MR. YANG LIU:** Yes, pushing.

20 **MS. CARLY PEDDLE:** Pushing. Thank you. How were those  
21 issues resolved?

22 **MR. YANG LIU:** So, what we would do is if a track buckled, we  
23 would send a technician immediately to assess the situation. Depending on the severity  
24 of the situation, different courses of action would be taken. If the deflection is significant  
25 enough that there poses to be a safety issue, then I think that portion of the track would  
26 come down, would be no longer used.

27 The short-term solution would be to cut the rail. As the steel  
28 expands there was basically an excess of steel in that section. So, we would need to

1 come overnight and cut a section out and weld it back together so that there is no  
2 longer the stress in the rail.

3 **MS. CARLY PEDDLE:** Is that called “destressing the rail”?

4 **MR. YANG LIU:** Yes. Except a proper destressing campaign  
5 takes -- I would say it takes more time because you would need to -- you cannot  
6 destress, you know, one area. Normally, you would destress a long stretch of track  
7 because it is continuously welded, and that would require an extensive maintenance  
8 period.

9 **MS. CARLY PEDDLE:** Is work still ongoing on this issue?

10 **MR. YANG LIU:** I think so, yes.

11 **MS. CARLY PEDDLE:** And do you know what work that is?

12 **MR. YANG LIU:** There would be a destressing campaign to  
13 destress all the track.

14 **MS. CARLY PEDDLE:** Okay, Mr. Liu, I just want to speak briefly  
15 about the first derailment. We’ve already heard from Mr. Goudge that Alstom recently  
16 produced a preliminary investigative report and made preliminary findings in relation to  
17 the first derailment. Are you aware of that report?

18 **MR. YANG LIU:** Are you referring to the interim report that was  
19 published in October 2021?

20 **MS. CARLY PEDDLE:** No, this was a more recent report from  
21 2022.

22 **MR. YANG LIU:** So that report was prepared by the rolling stock  
23 team, and I haven’t seen that report.

24 **MS. CARLY PEDDLE:** Okay.

25 **MR. YANG LIU:** I was moving to a different role.

26 **MS. CARLY PEDDLE:** Okay, that’s fine. Actually, I didn’t intend to  
27 go over the technical aspects with you regardless, but let me just ask if you are familiar  
28 with this from the report. Mr. Goudge testified that there was some relationship with rail

1 corrugation on the curves of the track which caused vibrations. Are you aware of that  
2 conclusion?

3 **MR. YANG LIU:** Yes.

4 **MS. CARLY PEDDLE:** I understand that reduction in rail  
5 corrugation was identified as a mitigation measure; is that right?

6 **MR. YANG LIU:** Yes.

7 **MS. CARLY PEDDLE:** So, if I could just take you to Document  
8 COW 0466007. And just while that is being pulled up, Mr. Liu, I will just advise you that  
9 this is the operations restrictions document.

10 **MR. YANG LIU:** Okay.

11 **MS. CARLY PEDDLE:** Are you familiar with this document?

12 **MR. YANG LIU:** So, the first time seeing this document was this  
13 week, when it was sent to me as part of the preparation for this inquiry.

14 **MS. CARLY PEDDLE:** As the project engineering manager for the  
15 maintenance project, would you expect to have seen this document before?

16 **MR. YANG LIU:** I mean, if I knew this document existed, I think it  
17 would make sense for the project engineering manager to be aware of it and to see it.  
18 Maybe it as shown to the previous person in the role, but I haven't seen it before.

19 **MS. CARLY PEDDLE:** Do you agree that these are the restrictions  
20 to be observed by the operator and maintainer to ensure the safety of the system?

21 **MR. YANG LIU:** Having read it, yes, I think it is a very important  
22 document.

23 **MS. CARLY PEDDLE:** Okay. If we could just go to page 29 of that  
24 document? At the very bottom of the page, 6.4.1., yes, perfect. Mr. Liu, if you could  
25 just read that to yourself? If you could just actually go down slightly so we can see the  
26 top of page 30? Yes, that's perfect.

27 **MR. YANG LIU:** Yes.

28 **MS. CARLY PEDDLE:** So, do you agree that in this document,

1 there is a recommendation to establish a working group to monitor the wheel and rail  
2 data?

3 **MR. YANG LIU:** Yes.

4 **MS. CARLY PEDDLE:** Was that done prior to your arrival in May  
5 2020, to your knowledge?

6 **MR. YANG LIU:** Not to my knowledge.

7 **MS. CARLY PEDDLE:** Has it been done since?

8 **MR. YANG LIU:** There is no -- there isn't a working group  
9 established, I would say, but rail and wheel wear is now a significant topic that we are  
10 putting a lot of attention on, and I believe RTM is also putting a lot of attention on it as  
11 well.

12 **MS. CARLY PEDDLE:** And that attention has been since some of  
13 the issues experienced following revenue service?

14 **MR. YANG LIU:** Yes.

15 **MS. CARLY PEDDLE:** And so, maybe for the sake of efficiency, I'll  
16 just ask, the other recommendations here, so ultrasonic testing, monitoring the wheel  
17 profile wear rates through visual inspection and monitoring LRV-mounted lubricator  
18 performance, were any of those done prior to your arrival in May 2020, to your  
19 knowledge?

20 **MR. YANG LIU:** Yes.

21 **MS. CARLY PEDDLE:** Okay. Can you tell me a bit more about  
22 that? Which ones?

23 **MR. YANG LIU:** So, with respect to the first one, rail wear visual  
24 inspection, so that is actually part of our preventative maintenance on the track. Every  
25 month, during the monthly track inspection, that is one of the criteria where we must --  
26 or the technician actually doing the maintenance needs to identify areas with high wear.  
27 Ultrasonic testing was being done through a contractor of Alstom before my arrival on  
28 the project. Monitoring of the wheel profile wear rates through visual inspection, so that

1 is also being done as part of the preventative maintenance program where every three  
2 months we would get the wheel profile, measure the wheel profile, and then reprofile the  
3 wheels to the nominal wheel profile. And monitoring the effectiveness of the LRV-  
4 mounted lubricators, so these would be the wheel flange lubricators that apply grease  
5 on the wheel flange to lubricate the wheel-rail interface. That was being done -- we  
6 started to do that after the issues we were seeing with the derailment and the high  
7 roughness between the wheel and the rail.

8 **MS. CARLY PEDDLE:** Okay. Now, I see I am almost out of time,  
9 so I will just ask you one last set of questions here, Mr. Liu. With respect to the second  
10 derailment, I understand it was a result of human error on the part of Alstom  
11 maintenance staff, correct?

12 **MR. YANG LIU:** I would say Alstom retrofit staff.

13 **MS. CARLY PEDDLE:** Okay. Yes, thank you.

14 And Alstom introduced more steps in the process as assurance  
15 measures and your evidence to Commission counsel during your interview was that this  
16 would not occur again; is that right?

17 **MR. YANG LIU:** Yes.

18 **MS. CARLY PEDDLE:** There are now quality checks for this work  
19 because it's a safety critical issue?

20 **MR. YANG LIU:** There are a lot of -- a lot more quality involvement  
21 in the whole retrofit process in regards to each normal quality case that's being  
22 introduced and more sign off needed on -- or for a quality inspector on these safety  
23 critical tests.

24 **MS. CARLY PEDDLE:** And is that the case for all safety critical  
25 tests?

26 **MR. YANG LIU:** I cannot answer that with full certainty because it  
27 was really a quality process.

28 **MS. CARLY PEDDLE:** Okay. Thank you. Those are all my

1 questions for you, Mr. Liu.

2 **MR. YANG LIU:** Oh, thank you very much.

3 **COMMISSIONER HOURIGAN:** All right. Thank you, counsel. We  
4 will take the afternoon break.

5 **THE REGISTRAR:** Order. All rise. The Commission will recess  
6 for 15 minutes.

7 --- Upon recessing at 4:00 p.m.

8 --- Upon resuming at 4:13 p.m.

9 **THE REGISTRAR:** Order. All rise. The court is now resumed.

10 **COMMISSIONER HOURIGAN:** All right. Mr. Liu, you will be  
11 examined now by a number of counsel for various participants in the inquiry. The first is  
12 the City of Ottawa. Go ahead, counsel.

13 **MS. SHARON VOGEL:** Thank you, Mr. Commissioner. Sharon  
14 Vogel, V-O-G-E-L, for the City of Ottawa.

15 **--- CROSS-EXAMINATION BY MS. SHARON VOGEL:**

16 **MS. SHARON VOGEL:** Mr. Liu, Alstom's plan about where to  
17 manufacture the vehicles for the Ottawa LRT changed repeatedly over time as you  
18 advised in your Commission interview, correct?

19 **MR. YANG LIU:** Yes. At least -- I'm not sure "repeatedly," but it  
20 did change over time.

21 **MS. SHARON VOGEL:** Well, when you started in 2015, the first  
22 vehicle was being manufactured at Hornell, New York?

23 **MR. YANG LIU:** Yes.

24 **MS. SHARON VOGEL:** And the first two cars were to be  
25 manufactured there, correct?

26 **MR. YANG LIU:** Yes.

27 **MS. SHARON VOGEL:** And there were no cars at all ready when  
28 you started at the project in 2015, correct?

1                   **MR. YANG LIU:** Yes.

2                   **MS. SHARON VOGEL:** And it was Alstom's decision about where  
3 it was to conduct manufacturing, correct?

4                   **MR. YANG LIU:** I cannot really say yes; I was not involved in  
5 making that decision.

6                   **MS. SHARON VOGEL:** You were not involved in any way in the  
7 decision about where manufacturing was to be conducted?

8                   **MR. YANG LIU:** Yes, that's right.

9                   **MS. SHARON VOGEL:** It was Alstom's responsibility to properly  
10 staff and train its assembly staff in Ottawa once it decided to move manufacturing to  
11 Ottawa, correct?

12                   **MR. YANG LIU:** Yes.

13                   **MS. SHARON VOGEL:** In relation to the local content requirement,  
14 in your Commission interview, you reference the local content requirement as a cause  
15 of problems; do you recall that, sir?

16                   **MR. YANG LIU:** Yes.

17                   **MS. SHARON VOGEL:** But that was in the project agreement and  
18 the Alstom contract from the outset, correct?

19                   **MR. YANG LIU:** Yes.

20                   **MS. SHARON VOGEL:** And Alstom was obligated to find  
21 appropriate suppliers, correct?

22                   **MR. YANG LIU:** Yes.

23                   **MS. SHARON VOGEL:** And these new suppliers, they're Alstom's  
24 responsibility, correct?

25                   **MR. YANG LIU:** Yes.

26                   **MS. SHARON VOGEL:** And you've been with Alstom for seven  
27 years now --

28                   **MR. YANG LIU:** That's correct.

1                   **MS. SHARON VOGEL:** -- correct? And you're aware that Alstom  
2 is a large publicly traded company with a global reach and has 150,000 vehicles in  
3 commercial service worldwide according to its website, correct?

4                   **MR. YANG LIU:** Mm-hmm. Yes.

5                   **MS. SHARON VOGEL:** And it has supplied vehicles to over  
6 300 cities around the world, correct?

7                   **MR. YANG LIU:** Yes.

8                   **MS. SHARON VOGEL:** And it has 74,000 employees worldwide  
9 and 11,900 employees in the Americas alone, correct?

10                  **MR. YANG LIU:** If it -- yeah, I cannot say I memorized those  
11 numbers, but yes, I would assume so ---

12                  **MS. SHARON VOGEL:** In that ballpark based on its website ---

13                  **MR. YANG LIU:** Yeah.

14                  **MS. SHARON VOGEL:** -- correct?

15                  **MR. YANG LIU:** Yes. Based on the website, if it's on the website,  
16 it's true, yes.

17                  **MS. SHARON VOGEL:** So, it is a sophisticated entity?

18                  **MR. YANG LIU:** Definitely, yes.

19                  **MS. SHARON VOGEL:** And Alstom, with the Ottawa LRT being its  
20 first project in Canada, it committed to establish relationships with local suppliers,  
21 correct?

22                  **MR. YANG LIU:** Correct.

23                  **MS. SHARON VOGEL:** And if there were problems in Alstom  
24 failing to meet that commitment, that is not the City of Ottawa's cost to bear, is it?

25                  **MR. YANG LIU:** No. And that wasn't really what I was trying to say  
26 in my testimony.

27                  **MS. SHARON VOGEL:** But just to be clear, taxpayers in Ottawa  
28 should not be forced to pay more to help bring Alstom up the curve to become familiar



1 with the Canadian market, correct?

2 **MR. YANG LIU:** Yes, I agree with that. The City of Ottawa --  
3 myself, I will agree with it.

4 **MS. SHARON VOGEL:** So, if Alstom didn't realize that we have  
5 weather conditions in this country like freezing rain, as you referenced in the interview,  
6 that's Alstom's responsibility, correct?

7 **MR. YANG LIU:** Well, I wouldn't say Alstom didn't realize there will  
8 be freezing rain because all of those parameters was -- all of the climate conditions  
9 were tested in the climate chamber. What I was trying to say in my -- just to elaborate a  
10 little bit, what I was trying to say in my testimony was that it was not easy to find the  
11 staff with the technical knowledge locally in Ottawa to have a -- enough skilled  
12 technicians at the beginning to really test this, to -- in my scope to test these trains, so  
13 that was a challenge for us.

14 **MS. SHARON VOGEL:** A challenge that you were obligated to  
15 overcome, correct?

16 **MR. YANG LIU:** Yes. Yes.

17 **MS. SHARON VOGEL:** And Alstom, at the time that it agreed to  
18 joint this contract, this project, sold itself as experienced in cold weather countries like  
19 Sweden, Finland, Russia and Kazakhstan. So, it understood that we have freezing rain  
20 in Canada, correct?

21 **MR. YANG LIU:** Yes. It understood we have freezing rain.

22 **MS. SHARON VOGEL:** And to take you now to some questions  
23 about the testing, the group you led was responsible for factory-acceptance testing or  
24 serial testing of all the Stage 1 vehicles as you described this afternoon, correct?

25 **MR. YANG LIU:** Yes.

26 **MS. SHARON VOGEL:** And that involved both static and dynamic  
27 testing to ensure all of the functionalities on the vehicle were working, correct?

28 **MR. YANG LIU:** Correct.

1                   **MS. SHARON VOGEL:** And I believe you indicated this afternoon  
2 that testing starting in August 2016 when you finally got access to the light maintenance  
3 bay, although it wasn't completely powered, correct?

4                   **MR. YANG LIU:** Correct.

5                   **MS. SHARON VOGEL:** And the fact that the light maintenance bay  
6 was then not powered as of August -- fully powered as of August 2016, that OLRTC's  
7 responsibility, correct?

8                   **MR. YANG LIU:** Yes.

9                   **MS. SHARON VOGEL:** Not the City's responsibility, correct?

10                  **MR. YANG LIU:** I wouldn't imagine it to be the City's responsibility.

11                  **MS. SHARON VOGEL:** I'm sorry?

12                  **MR. YANG LIU:** I would not imagine it to be the City's  
13 responsibility, in my opinion ---

14                  **MS. SHARON VOGEL:** Thank you. And in terms of testing, you  
15 spoke of the challenges of finding local people to be involved in the testing, but you had  
16 an adequately sized test team that worked with you at Alstom?

17                  **MR. YANG LIU:** Yes, I did.

18                  **MS. SHARON VOGEL:** And those team members were  
19 adequately trained, correct?

20                  **MR. YANG LIU:** That's correct.

21                  **MS. SHARON VOGEL:** And it was Alstom's responsibility to recruit  
22 and train adequate numbers of individuals for this task?

23                  **MR. YANG LIU:** Yes, I think we were -- that's what we did,  
24 actually.

25                  **MS. SHARON VOGEL:** And you had full confidence, as you  
26 advised the Commission in your interview, that every test was performed properly,  
27 correct?

28                  **MR. YANG LIU:** Yes.

1                   **MS. SHARON VOGEL:** And you indicated this afternoon that when  
2 you left in May 2019, you were feeling pretty good about the trains, correct?

3                   **MR. YANG LIU:** That's correct. Yes.

4                   **MS. SHARON VOGEL:** And you indicated in your Commission  
5 interview that at the time you left, you were confident in the quality of the testing done  
6 and that it was done properly, correct?

7                   **MR. YANG LIU:** Correct.

8                   **MS. SHARON VOGEL:** And you were on a one-year break from  
9 May 2019 to May 2020, so you weren't present for any of the trial running so you have  
10 no first-hand knowledge of what occurred in that time period, correct?

11                  **MR. YANG LIU:** That's correct.

12                  **MS. SHARON VOGEL:** And you were just the testing and  
13 commissioning manager, but in that role, you were responsible for ensuring full and  
14 proper testing of the vehicles, correct?

15                  **MR. YANG LIU:** Yes, of the serial testing. Yes.

16                  **MS. SHARON VOGEL:** So, regardless of any schedule testing  
17 compression that you described this afternoon, by the time that serial testing was done,  
18 you did everything you needed to do to make sure the vehicles were safe and fit for use,  
19 correct?

20                  **MR. YANG LIU:** Yes. So, actually, I would phrase it like I ensured  
21 everything that was done to ensure the serial test was performed to the validated  
22 design.

23                  **MS. SHARON VOGEL:** And the fact that you ensured that the  
24 serial testing was done to confirm the validated design, and the fact that you might have  
25 had to redo some testing, that did not mean that the testing was not done, correct? All  
26 of the testing was done?

27                  **MR. YANG LIU:** You're correct, yes.

28                  **MS. SHARON VOGEL:** And it was your role to ensure that that

1 testing was completed properly, correct?

2 **MR. YANG LIU:** Yes.

3 **MS. SHARON VOGEL:** And Alstom had to do all the testing that it  
4 deemed appropriate before the fleet safety certificate was issued, correct?

5 **MR. YANG LIU:** Yes.

6 **MS. SHARON VOGEL:** And you indicated today that serial testing  
7 took place pretty much in parallel with the validation testing, but despite that fact you still  
8 did all the testing, but despite that fact, you still did all the testing you needed to do,  
9 didn't you?

10 **MR. YANG LIU:** Yes.

11 **MS. SHARON VOGEL:** You didn't cut any corners in your testing,  
12 did you?

13 **MR. YANG LIU:** No.

14 **MS. SHARON VOGEL:** In respect of the delays to the completion  
15 of the test track which you referenced today, which you advised you received access to  
16 in November 2016, those delays were delays by OLRTC, correct?

17 **MR. YANG LIU:** I don't know why there were delays, but I -- I don't  
18 know all the factors that went into the delays, but I know that the test track was delayed  
19 to be handed over to Alstom.

20 **MS. SHARON VOGEL:** But the lack of availability of the test track  
21 and other infrastructure, which you referenced, that lack of availability was OLRTC's  
22 responsibility, correct?

23 **MR. YANG LIU:** In my understanding, yes.

24 **MS. SHARON VOGEL:** And your past experience before this  
25 project was always working on projects, adding trains to existing systems, correct?

26 **MR. YANG LIU:** Yes.

27 **MS. SHARON VOGEL:** You have never, before this project, been  
28 involved in the launch of a new system, correct?

1                   **MR. YANG LIU:** That's correct.

2                   **MS. SHARON VOGEL:** And other witnesses have referenced  
3 issues with the Alstom vehicles, and the vehicles were even referred to as "fragile" by  
4 Mr. Palmer of Parsons in his evidence. They weren't fragile at the time you left in May  
5 2019, were they?

6                   **MR. YANG LIU:** I mean, fragile is, you know, a subjective word. I  
7 don't really know what he means by "fragile". I mean, I think there were also the  
8 opinion, you know, while this is a light rail, it is more fragile than a metro, yes. So, it sort  
9 of depends on what he means by "fragile".

10                  **MS. SHARON VOGEL:** Well, let's ask within the realm of your  
11 scope of work, which was testing. So, in your view, was the testing program that you  
12 implemented robust?

13                  **MR. YANG LIU:** Yes. So, in my opinion, we tested the trains to the  
14 validated design. So, this was the design that was chosen for Ottawa, and this was  
15 validated, and we ensured that every train coming off of the production line met those  
16 requirements.

17                  **MS. SHARON VOGEL:** And, in terms of winterization testing, I  
18 believe you referred to the fact that cars went through the climate testing at the NRC,  
19 correct?

20                  **MR. YANG LIU:** One train, yes.

21                  **MS. SHARON VOGEL:** And you saw no problems as a result of  
22 that testing?

23                  **MR. YANG LIU:** That was part of the validation testing, which I am  
24 not significantly involved in. I cannot really speak to that, what are the exact problems.

25                  **MS. SHARON VOGEL:** But you understood that Alstom also ran  
26 trains on the line in Ottawa during the winter prior to RSA, correct?

27                  **MR. YANG LIU:** Yes.

28                  **MS. SHARON VOGEL:** And all retrofits that were necessary for

1 the vehicles to be safe were completed before RSA, correct?

2 **MR. YANG LIU:** Yes.

3 **MS. SHARON VOGEL:** And retrofits are a normal part of the  
4 vehicle manufacturing process, correct?

5 **MR. YANG LIU:** Yes, to ---

6 **MS. SHARON VOGEL:** And ---

7 **MR. YANG LIU:** --- some degree.

8 **MS. SHARON VOGEL:** Sorry?

9 **MR. YANG LIU:** To some degree, some retrofits are always  
10 common, I would say.

11 **MS. SHARON VOGEL:** And you mitigated any risks associated  
12 with the retrofits through regression testing, correct?

13 **MR. YANG LIU:** Non-regression testing.

14 **MS. SHARON VOGEL:** Non-regression. I'm sorry. And you did all  
15 the non-regression testing that was necessary, correct?

16 **MR. YANG LIU:** Correct.

17 **MS. SHARON VOGEL:** And you returned to the project in May  
18 2020 as maintenance engineer, correct?

19 **MR. YANG LIU:** Maintenance engineering manager.

20 **MS. SHARON VOGEL:** Maintenance engineering manager,  
21 apologies. And so, you are aware that in the maintenance term the City helped Alstom  
22 deal with issues that arose following revenue service availability, and particularly during  
23 COVID, correct?

24 **MR. YANG LIU:** Which issues are you specifically referring to?

25 **MS. SHARON VOGEL:** I'm specifically referring to the fact that  
26 during the maintenance term, issues arose, as described with Commission counsel this  
27 after, including in relation to the OCS and other ---

28 **MR. YANG LIU:** Yes.

1                   **MS. SHARON VOGEL:** --- issues, the door problems and other  
2 issues. And the City, during COVID, took the collaborative step of agreeing to reduce  
3 service very early in the pandemic, as of March 27, 2020, correct?

4                   **MR. YANG LIU:** Yes.

5                   **MS. SHARON VOGEL:** At this time, it agreed to reduce service by  
6 three trains, down to 11 in the morning service, correct?

7                   **MR. YANG LIU:** Yes.

8                   **MS. SHARON VOGEL:** And you advised Commission counsel that  
9 on the technical front, City staff have been reasonable to deal with; is that correct?

10                  **MR. YANG LIU:** In -- yes.

11                  **MS. SHARON VOGEL:** And, in respect -- sorry, I should let you  
12 finish.

13                  **MR. YANG LIU:** In my opinion, yes, there has been -- I mean, I will  
14 say generally speaking, yes, they are reasonable.

15                  **MS. SHARON VOGEL:** You were asked some questions about the  
16 use of emergency brakes, which you have explained, that they brake the train in the  
17 shortest distance possible. And you said that emergency brakes can be applied for a lot  
18 of reasons, as I understand it, correct?

19                  **MR. YANG LIU:** Yes.

20                  **MS. SHARON VOGEL:** And some of those reasons would involve,  
21 for example, if a train is close to a station, a false trigger could be prompted by the  
22 guideway intrusion detection system, which would automatically trigger the emergency  
23 brakes. And that, in fact, did happen in the early days by blowing paper or falling snow,  
24 correct?

25                  **MR. YANG LIU:** Correct.

26                  **MS. SHARON VOGEL:** And the pantograph malfunctioning, that  
27 can trigger the emergency brake, correct?

28                  **MR. YANG LIU:** Yes, I believe so, but I don't think we have any

1 pantograph -- emergency brake trigger due to pantograph malfunctioning.

2 **MS. SHARON VOGEL:** Well, you did have inductors fail, and the  
3 inductor failing could trigger the emergency brake, correct?

4 **MR. YANG LIU:** I don't believe so. I don't believe so.

5 **MS. SHARON VOGEL:** Well, another circumstance where the  
6 emergency brake could be triggered is if the vehicle did not detect a transponder  
7 between the tracks and the vehicle had a loss of position. It didn't understand where it  
8 was, then that might trigger the emergency brakes, correct?

9 **MR. YANG LIU:** Correct.

10 **MS. SHARON VOGEL:** And faulty valves in the braking units, they  
11 could trigger the emergency brakes, correct?

12 **MR. YANG LIU:** Maybe locally on one bogie, not across the train.

13 **MS. SHARON VOGEL:** And standing systems not working  
14 properly, that could trigger emergency brakes?

15 **MR. YANG LIU:** No.

16 **MS. SHARON VOGEL:** And in relation to wheel flats, you were  
17 asked a whole series of questions about wheel flats. The wheel flats, that was not an  
18 issue known about as of revenue service availability, was it?

19 **MR. YANG LIU:** It was not.

20 **MS. SHARON VOGEL:** And you also explained the use of the  
21 wheel lathe and why it is an important piece of equipment. It is an important piece of  
22 equipment, correct?

23 **MR. YANG LIU:** Yes.

24 **MS. SHARON VOGEL:** And it is Alstom that operates the wheel  
25 lathe, correct?

26 **MR. YANG LIU:** Correct.

27 **MS. SHARON VOGEL:** And it wasn't functioning in the winter of  
28 2020, was it?



1                   **MR. YANG LIU:** There were frequent breakdowns, that's my  
2 understanding.

3                   **MS. SHARON VOGEL:** And I believe you indicated in your  
4 interview with Commission counsel that RTM wouldn't share the details of what was  
5 wrong with the wheel lathe and why it was breaking down frequently, correct?

6                   **MR. YANG LIU:** Yes.

7                   **MS. SHARON VOGEL:** And the railcar mover also breaks down  
8 frequently, correct?

9                   **MR. YANG LIU:** Yes.

10                  **MS. SHARON VOGEL:** And you indicated in your Commission  
11 interview that there was no hot water in the shed to wash down the trains, correct?

12                  **MR. YANG LIU:** Yes.

13                  **MS. SHARON VOGEL:** And it is important to keep the trains  
14 washed to clean off the excess dust and pollution on the line inductors, as you  
15 explained this afternoon, correct?

16                  **MR. YANG LIU:** Yes, but the line inductors wouldn't be cleaned on  
17 a daily basis. It is actually a different cleaning.

18                  **MS. SHARON VOGEL:** But it is important to keep those line  
19 inductors clean, is it not?

20                  **MR. YANG LIU:** Yes, it is.

21                  **MS. SHARON VOGEL:** And for a low-floor vehicle, the majority of  
22 the equipment is located on the roof, correct?

23                  **MR. YANG LIU:** Correct.

24                  **MS. SHARON VOGEL:** And it is important to inspect and clean  
25 that roof, correct?

26                  **MR. YANG LIU:** Yes.

27                  **MS. SHARON VOGEL:** And in terms of the issues that arose with  
28 the Alstom vehicles during the maintenance term, you were already asked a series of

1 issues about the overhead catenary system and door fault issues, and so those were  
2 issues that arose during the maintenance period, correct?

3 **MR. YANG LIU:** Correct.

4 **MS. SHARON VOGEL:** And those were not issues that were  
5 known about as of revenue service availability, correct?

6 **MR. YANG LIU:** Correct.

7 **MS. SHARON VOGEL:** And there were also switch failures in the  
8 maintenance term, correct?

9 **MR. YANG LIU:** You mean the switches on the main line, right?

10 **MS. SHARON VOGEL:** Yes.

11 **MR. YANG LIU:** Yes, that's correct.

12 **MS. SHARON VOGEL:** And those issues were not known about  
13 as of revenue service availability, correct?

14 **MR. YANG LIU:** You are correct.

15 **MS. SHARON VOGEL:** And Commission counsel reviewed with  
16 you the fact that in the summer of 2020, the vehicles experienced wheel cracking, and  
17 that was a serious issue, correct?

18 **MR. YANG LIU:** Yes.

19 **MS. SHARON VOGEL:** And you indicated that Alstom identified  
20 these cracks, and it did so during a proactive bogie retrofit program, correct?

21 **MR. YANG LIU:** Correct.

22 **MS. SHARON VOGEL:** And the wheel cracking, that was not the  
23 fault of the City, was it?

24 **MR. YANG LIU:** No.

25 **MS. SHARON VOGEL:** The TSB indicated that the wheel cracking  
26 involved certain Lucchini resilient wheels installed on the fleet equipped with the jacking  
27 screws, correct?

28 **MR. YANG LIU:** That's correct.

1                   **MS. SHARON VOGEL:** And it was the installation of those jacking  
2 screws that were the problem, correct?

3                   **MR. YANG LIU:** Yes.

4                   **MS. SHARON VOGEL:** And Alstom committed to inspect the fleet  
5 and replace the impacted wheels, correct?

6                   **MR. YANG LIU:** Correct.

7                   **MS. SHARON VOGEL:** And it took Alstom over 17 months, after  
8 repeatedly failing to meet scheduled dates, to fix the cracked wheels; correct?

9                   **MR. LIU YANG:** I cannot speak to that.

10                  **MS. SHARON VOGEL:** Well, let's pull up a document.  
11 COW0534279.

12 **--- EXHIBIT No. 154:**

13                               COW0534279 – Letter Green Wheels for Service – 22  
14                               December 2021

15                               **(SHORT PAUSE)**

16                  **MS. SHARON VOGEL:** And if you turn to the next page, have you  
17 seen this letter before, Mr. Liu?

18                  **MR. LIU YANG:** No, I haven't seen this letter before.

19                  **MS. SHARON VOGEL:** Okay. We'll give you a second to look at  
20 it.

21                               And if we could scroll down, please, but still so that Mr. Liu can see  
22 the whole letter.

23                               **(SHORT PAUSE)**

24                  **MR. LIU YANG:** Okay.

25                  **MS. SHARON VOGEL:** And do you see Mr. Liu, that 17 months  
26 after the issue of the cracked wheels was first detected after four different schedule  
27 commitments were made, the wheel replacement program was not complete; and, in  
28 fact, it wasn't until February 25<sup>th</sup>, 2022 that the wheel crack -- wheel replacement

1 program was not complete; correct?

2 **COMMISSIONER HOURIGAN:** Well, sorry; hang on. Do you have  
3 any knowledge of this, outside of this letter? I mean, the witness said he didn't know.  
4 You've now sent him to a letter that says some things. What are you asking him;  
5 whether that's what the letter says?

6 **MS. SHARON VOGEL:** I'm asking him if ---

7 **COMMISSIONER HOURIGAN:** No, I'm speaking.

8 **MS. SHARON VOGEL:** --- he has an understanding. I'm sorry.

9 **COMMISSIONER HOURIGAN:** Ms. Vogel, I'm speaking.

10 **MS. SHARON VOGEL:** Sorry, apologies.

11 **COMMISSIONER HOURIGAN:** Let me finish my thought.

12 **MS. SHARON VOGEL:** Yeah, apologies.

13 **COMMISSIONER HOURIGAN:** You asked him if he knew  
14 anything about this. He said he didn't. Now you take him to a letter that he's never  
15 seen before, it's not addressed to him. So you need to be very clear in terms of what  
16 you're asking him, all right?

17 **MS. SHARON VOGEL:** Yes. I'm asking him if he knows when the  
18 last LRV underwent the cracked wheel replacement, because I believe he said to  
19 Commission counsel that it was in 2021, and I believe that, based on this letter, it was  
20 actually not until February 2022 that that program was complete. And I would just like  
21 to know if he has any understanding of that.

22 **COMMISSIONER HOURIGAN:** Go ahead and ask him that  
23 question.

24 **MS. SHARON VOGEL:** Mr. Liu, do you have any understanding of  
25 whether it was not until February 2022 that the last LRV underwent the cracked wheel  
26 replacement?

27 **MR. LIU YANG:** I didn't have that understanding -- I didn't -- I'm  
28 not aware of the exact dates. I stated earlier that this whole program was mandated by

1 a different group. I'm -- it was my estimate of fall 2021. I could very well be wrong on  
2 that date, so if it's February -- if you're telling me it was February 2022, and it's written  
3 on the letter, I will say, okay, it is what it shows.

4 **MS. SHARON VOGEL:** You can take down the share. Thank you.  
5 Mr. Liu, are you aware that in relation to corrugation, grinding did  
6 happen in 2021?

7 **MR. LIU YANG:** Yes.

8 **MS. SHARON VOGEL:** And in 2021, the entire line was re-grinded  
9 back to the normal profile; correct?

10 **MR. LIU YANG:** It was re-grinded much as possible to the normal  
11 profile.

12 **MS. SHARON VOGEL:** And in relation to the OCS, you'd agree  
13 with me that there were specific challenges with the maintenance of the OCS system;  
14 correct?

15 **MR. LIU YANG:** Yes.

16 **MS. SHARON VOGEL:** And there was inadequate training for the  
17 power technicians, was there, Mr. Liu?

18 **MR. LIU YANG:** In what sense are you referring to?

19 **MS. SHARON VOGEL:** I'm referring to a presentation, and we can  
20 pull up a document; it's ALS0013631.

21 **--- EXHIBIT No. 155:**

22 ALS0013631 – Powerpoint Alstom QMS: OCS Maintenance  
23 Closing meeting: Discussion of Draft Audio Findings – 12  
24 June 2020

25 **(SHORT PAUSE)**

26 **MS. SHARON VOGEL:** Are you familiar with this presentation, Mr.  
27 Liu? It's an RTM presentation -- if you look at the top left corner -- from June 12, 2020.

28 **MR. LIU YANG:** Yes, I've seen it.

1                   **MS. SHARON VOGEL:** You are familiar with this?  
2                   If we could go to Slide 6, please, that's headed "Alltrade" at the  
3 top?

4                   And it indicates that:  
5                                "Alstom recognized that in this period it did not have  
6                               sufficient resources with the correct training to  
7                               maintain the network and manage various OCS  
8                               rectification activities that still remained after the  
9                               complication of the T&C phase." (As read)

10                  And I'm reading from the slide.

11                  Is that correct, sir?

12                  **MR. LIU YANG:** Because I was not actually present at the  
13 beginning of revenue service, I don't think I can confirm this fact.

14                  **MS. SHARON VOGEL:** Okay. We can take down the slide.

15                  Would you agree with me that Alstom could have used more  
16 supervisors in the maintenance phase on operations and rolling stock, and it could have  
17 been faster in its responses?

18                  **MR. LIU YANG:** I mean, the staff was really put under a lot of  
19 pressure during the -- especially during the early stages of the maintenance. I think  
20 more supervisors would have helped.

21                  **MS. SHARON VOGEL:** And would you agree with me that there  
22 were resourcing issues on this project on the part of Alstom?

23                  **MR. LIU YANG:** Resourcing issues? What sense are you referring  
24 to; lack of resources, or...?

25                  **MS. SHARON VOGEL:** Lack of adequately qualified resources  
26 and sufficient numbers of resources on the Alstom side.

27                  **MR. LIU YANG:** I think at the beginning, at least in the engineering  
28 team, where I am responsible for, there is adequate numbers of qualified resources. I

1 cannot really speak for the other functions.

2 **MS. SHARON VOGEL:** I'd like to show you a document, please.

3 It's Document COW0593599. It's a letter from Mr. Michael Keroullé, the President and  
4 CEO of Alstom Americas, dated December 24, 2021, and the letter is addressed to  
5 Mayor Watson and Mr. Allan Hubley, a Councillor and Chair of Transit Commission.

6 Have you seen this letter before, sir?

7 **--- EXHIBIT No. 156:**

8 COW0593599 – Alstom Letter to Mayor Jim Watson and  
9 Councillor Hubley – 24 September 2021

10 **MR. LIU YANG:** No, I have not seen this letter.

11 **MS. SHARON VOGEL:** Well, I would like to show it to you. You'll  
12 see at the bottom of the second page, Mr. Keroullé states that he would like to  
13 summarize the main directions of the Alstom plan going forward, and this is post the  
14 second derailment.

15 And turning to the next page, we see that the first item he  
16 references here at the top item on this page, is to uplift the competencies of the Alstom  
17 team onside, both in terms of site leadership and supervision at the MSF, and in terms  
18 of a better coverage during all shifts.

19 So Mr. Keroullé saw a resourcing problem and committed to  
20 address it, didn't he?

21 **MR. LIU YANG:** That what it appears to say in this letter, yes.

22 **MS. SHARON VOGEL:** So effectively he is committing to bringing  
23 the A team to Ottawa, didn't he?

24 **MR. LIU YANG:** The A -- he said -- I don't -- okay, it could be  
25 interpreted that way, but also it could mean that he's going to strengthen the leadership  
26 team here.

27 **MS. SHARON VOGEL:** Because previously the leadership team, a  
28 strong leadership team had not been brought to bear, previously, by Alstom; is that

1 correct?

2 **MR. LIU YANG:** In my opinion, it was always a strong leadership  
3 team in Ottawa.

4 **MS. SHARON VOGEL:** You would agree that both derailments,  
5 the derailments in August 2021 and the derailment in September 2021, were the result  
6 of issues with the vehicles; correct?

7 **MR. LIU YANG:** The second one in 2021, yes. The first one, I  
8 think the root cause investigation has been done. I haven't seen that report. I cannot  
9 really confirm what you just said.

10 **MS. SHARON VOGEL:** Well, in relation to the second derailment,  
11 you were asked about the second derailment, and the September 19, 2021 derailment  
12 which involved the derailment of LRV 21, it derailed, and it was one of the LRVs that  
13 had undergone remedial work that was because of the mitigation put in place because  
14 of the first derailment; correct?

15 **MR. LIU YANG:** That's correct.

16 **MS. SHARON VOGEL:** So the bolt on the hub of the gearbox  
17 cover was not torqued properly; correct?

18 **MR. LIU YANG:** Correct.

19 **MS. SHARON VOGEL:** And a shift change was a contributing  
20 factor for that failure to properly torque the bolt; correct?

21 **MR. LIU YANG:** Correct.

22 **MS. SHARON VOGEL:** And you'd agree with me that the  
23 derailment and the significant damage to the vehicle and the infrastructure was caused  
24 by Alstom staff inspecting the vehicle, not noting that the bolt was not retorqued;  
25 correct?

26 **MR. YANG LIU:** I don't think it's possible to know that after the  
27 whole assembly has been put back together, you really cannot inspect it any more. I  
28 think it was the fact that it wasn't bolted on properly in the first place.



1                   **MS. SHARON VOGEL:** But there were not proper checks in place  
2 to ensure that that function was carried out properly; correct?

3                   **MR. YANG LIU:** Yes, in hindsight looking at it, additional quality  
4 checks have been put in place to do those checks?

5                   **MS. SHARON VOGEL:** But at the time there was a lack of  
6 oversight by Alstom with regards to the refurbishment work; correct?

7                   **MR. YANG LIU:** Looking back at it, yes.

8                   **MS. SHARON VOGEL:** And in relation to the OC Transpo driver  
9 who was driving LRV-1119, the fact that he did not notice that the train had derailed,  
10 that was not the cause of that derailment; was it?

11                  **MR. YANG LIU:** No, it was not the cause, not the cause, no.

12                  **MS. SHARON VOGEL:** And in March 2021 there was a  
13 derailment in the MSF yard; correct?

14                  **MR. YANG LIU:** I think it was in the ---

15                  **MS. SHARON VOGEL:** Do you recall that?

16                  **MR. YANG LIU:** Yes, it was in the yard.

17                  **MS. SHARON VOGEL:** And at that time LRV, it was a derailment  
18 of LRV-1116 which was coupled to LRV-1117?

19                  **MR. YANG LIU:** Yes.

20                  **MS. SHARON VOGEL:** And as the vehicle moved through a  
21 curve in the maintenance and facility yard, there was a derailment of LRV-1116;  
22 correct?

23                  **MR. YANG LIU:** Yes.

24                  **MS. SHARON VOGEL:** And even after the bogie had climbed and  
25 derailed the lead car, which was LRV-1117, did not see any errors and it continued;  
26 correct?

27                  **MR. YANG LIU:** It continued up to a certain point.

28                  **MS. SHARON VOGEL:** And there was sufficient damage to the

1 infrastructure; correct?

2 **MR. YANG LIU:** Yes.

3 **MS. SHARON VOGEL:** And significant damage to LRV-1116;  
4 correct?

5 **MR. YANG LIU:** Correct.

6 **MS. SHARON VOGEL:** And LRV-1116 is still out of service;  
7 correct?

8 **MR. YANG LIU:** Yes, I believe so, yes.

9 **MS. SHARON VOGEL:** And this derailment occurred when  
10 Alstom was operating the train; correct?

11 **MR. YANG LIU:** Correct.

12 **MS. SHARON VOGEL:** And Alstom advised the City at the time  
13 that the driver would not have felt anything unusual given that it was the trailing car  
14 which had derailed; correct?

15 **MR. YANG LIU:** Yes.

16 **MS. SHARON VOGEL:** And isn't that the same situation as the  
17 September derailment where the derailment was on the trailing vehicle such that the OC  
18 Transpo operator would not have felt anything?

19 **MR. YANG LIU:** In my opinion I don't think the driver felt anything,  
20 but I think the one difference is, that there was a CCTV footage on the screen that  
21 showed the platform edge during the LRV-21 derailment, whereas the LRV-16  
22 derailment, there was no such CCTV footage. Whether or not the driver could have  
23 noticed it, I don't know; I cannot say that.

24 **MS. SHARON VOGEL:** And Alstom was placed under increased  
25 monitoring by RTG after the second derailment; correct ---

26 **MR. YANG LIU:** Yes.

27 **MS. SHARON VOGEL:** --- by RTM? And there have been  
28 additional issues since the second derailment in September 2021, haven't there?

1                   **MR. YANG LIU:** Yes, there has been issues.

2                   **MS. SHARON VOGEL:** Are you aware that there was a significant  
3 issue where RTG failed to put oil in the gearbox of a vehicle which resulted in a service  
4 interruption?

5                   **MR. YANG LIU:** Yes.

6                   **MS. SHARON VOGEL:** And Alstom investigated and determined  
7 that there had been a failure to fill the gearbox with oil; correct?

8                   **MR. YANG LIU:** Yes.

9                   **MS. SHARON VOGEL:** And the vehicle was then removed due to  
10 damage; correct?

11                  **MR. YANG LIU:** Correct.

12                  **MS. SHARON VOGEL:** And a number of other vehicles were  
13 found to have gearboxes that were not filled with oil properly; correct?

14                  **MR. YANG LIU:** Just to clarify there, so a fleet check was  
15 conducted and a number of gearbox – there was no gearbox found without oil; there  
16 was no gearbox that was empty, but a number of gearboxes had to be topped up.

17                  **MS. SHARON VOGEL:** Right. And I believe it was six vehicles  
18 had at least one gearbox with oil levels below the minimum allowance; is that correct?

19                  **MR. YANG LIU:** I don't recall the specific number, but there was a  
20 few vehicles, yes.

21                  **MS. SHARON VOGEL:** And a number of the gearboxes actually  
22 needed to be replaced; correct?

23                  **MR. YANG LIU:** Those at risk; those that may be at risk were  
24 replaced, yes.

25                  **MS. SHARON VOGEL:** And you'd agree with me that this is yet  
26 another issue that has arisen with respect to the performance of the maintenance  
27 services; correct?

28                  **MR. YANG LIU:** Over the global – the entire Ottawa team, yes.

1                   **MS. SHARON VOGEL:** And are you aware that the City's  
2 independent expert, Mott MacDonald, issued a report in April 2022 regarding the  
3 Confederation Line, including the maintenance services?

4                   **MR. YANG LIU:** Yes.

5                   **MS. SHARON VOGEL:** Have you read that report?

6                   **MR. YANG LIU:** Yes, I have.

7                   **MS. SHARON VOGEL:** I'd like to pull up that report; it's  
8 COM0010116. It's the Mott MacDonald report dated April 2022. And if we go to page  
9 12 of the pdf.

10 **--- EXHIBIT No. 157:**

11                   COM0010116 – Report Ottawa LRT Independent Review  
12                   Report – April 2022

13                   **MS. SHARON VOGEL:** Mott MacDonald, looking at page 12, if we  
14 go down to the conclusion, please?

15                   Mott MacDonald, in the second paragraph under the conclusion,  
16 Mr. Liu, states:

17                   “In the longer term we believe that Project Co should adjust their  
18 maintenance practices in accordance with good industry practices  
19 defined in other jurisdictions to gather and track the necessary data  
20 to prove traceability and continuity on how often assets have been  
21 adjusted, how long they have run and the magnitude of any  
22 adjustments and replacements made. This data should be  
23 maintained through the lifecycle of the project and used to apply a  
24 pro-active approach to maintenance and asset management.”

25                   Would you agree with me that gathering and tracking data, to  
26 provide traceability and continuity is an important step in the maintenance of an asset?

27                   **MR. YANG LIU:** Yes.

28                   **MS. SHARON VOGEL:** And that this information will assist a

1 maintainer in performing pro-active maintenance, not simply reactionary maintenance;  
2 correct?

3 **MR. YANG LIU:** That's correct, but I do want to highlight, this is  
4 already being done, and I also want to highlight that, you know, this report when I read  
5 it, it wasn't – there wasn't a consultation with Alstom; at least with the management  
6 team who I reviewed it with, so I don't believe they got our inputs to this report.

7 **COMMISSIONER HOURIGAN:** All right, counsel, you're about ten  
8 minutes over, so if you want to start wrapping up, please.

9 **MS. SHARON VOGEL:** Yes, I will. Thank you. But you would  
10 agree that this recommendation for proactive maintenance as opposed to reactive  
11 maintenance, accords with good industry practice; correct?

12 **MR. YANG LIU:** Yes.

13 **MS. SHARON VOGEL:** Those are my questions. Thank you.

14 **COMMISSIONER HOURIGAN:** All right, thank you. Next is RTG.

15 **--- CROSS-EXAMINATION BY MR. MANU CHOWDHURY:**

16 **MR. MANU CHOWDHURY:** Good afternoon, Mr. Commissioner,  
17 and good afternoon, Mr. Liu. Can you hear me, Mr. Liu, by the way?

18 **MR. YANG LIU:** Yes.

19 **MR. MANU CHOWDHURY:** For the record, Manu Chowdhury, for  
20 the RTG parties. Mr. Liu, I have a few questions for you on behalf of RTG. I want to  
21 start off by talking about the first derailment that happened on August 8<sup>th</sup>, 2021. Do you  
22 remember discussing a bit about that with Commission counsel during your interview?  
23 And, sorry, Ms. Peddle brought it up today as well a little bit.

24 **MR. YANG LIU:** Yes.

25 **MR. MANU CHOWDHURY:** And in your Commission counsel  
26 interview, if I have it right, you said that while the root cause analysis was ongoing, what  
27 you do know is that the axel hub came apart; do you remember that?

28 **MR. YANG LIU:** Yes.

1                   **MR. MANU CHOWDHURY:** Okay. Now, I just want to be clear,  
2 and I think Ms. Peddle covered this a bit, but just for my sake, have you read the root  
3 cause report that Alstom issued on May 5<sup>th</sup>, 2022?

4                   **MR. YANG LIU:** No, I haven't read it.

5                   **MR. MANU CHOWDHURY:** Okay. And you didn't read it as part  
6 of preparation for today or anything; correct?

7                   **COMMISSIONER HOURIGAN:** He already testified he hadn't seen  
8 it.

9                   **MR. MANU CHOWDHURY:** Okay. So, Mr. Liu, may I just take  
10 you to one document which is ALS0018035.

11                   As we're pulling it up, Mr. Liu, this is the incident report; I think you  
12 mentioned this with Ms. Peddle, that was issued on October 28<sup>th</sup> – pardon me, October  
13 27<sup>th</sup> of 2021?

14                   **--- EXHIBIT No. 158:**

15                   ALS0018035 – Alstom Incident Report – LRV 1119 Mainline  
16 Derailment – 27 October 2021

17                   **MR. YANG LIU:** Yes.

18                   **MR. MANU CHOWDHURY:** And did you review this one?

19                   **MR. YANG LIU:** Yes, I did.

20                   **MR. MANU CHOWDHURY:** Okay. May I please take you to page  
21 nine or section 3.3. So, Mr. Liu, section 3.3 says, as you can see it on the screen:

22                   "The point of the switches in the effect area showed signs of  
23 wear; however, the gauge was still within maintenance  
24 tolerance, and there were no work orders in the system for  
25 this observation. As such, there were no defects present in  
26 the Tunney's Pasture area that would lead directly to a  
27 derailment."

28                   Do you see that, sir?

1                   **MR. YANG LIU:** Yes.

2                   **MR. MANU CHOWDHURY:** Okay. And so, this was Alstom's view  
3 of the first derailment, in relation to the track at least, immediately after, is that fair to  
4 say, sir?

5                   **MR. YANG LIU:** This was -- shall we say there was no noticeable  
6 defect that would have directly caused the derailment, and that was the position at that  
7 time.

8                   **MR. MANU CHOWDHURY:** Right. So ---

9                   **MR. YANG LIU:** But in the previous, just one addition there, we do,  
10 however -- we did not reach any conclusions about the long-term effects of railway  
11 interface in this section, but it was, you know...

12                  **MR. MANU CHOWDHURY:** No. No, I understand that point, sir. I  
13 take it that your evidence is, on just sort of an observational basis, there wasn't anything  
14 obvious standing out with respect to the track ---

15                  **MR. YANG LIU:** That's correct.

16                  **MR. MANU CHOWDHURY:** --- would that be fair to say?

17                  **MR. YANG LIU:** Yes.

18                  **MR. MANU CHOWDHURY:** Okay. And so, sir, it's fair to say in  
19 this incident report, at least, Alstom didn't conclude that the tracks are unsafe, correct?

20                  **MR. YANG LIU:** Yes.

21                  **MR. MANU CHOWDHURY:** And Alstom didn't conclude that  
22 vehicles should stop running on the track, would that be fair to say as well?

23                  **MR. YANG LIU:** Yes, that's correct.

24                  **MR. MANU CHOWDHURY:** Okay. And you mentioned this to Ms.  
25 Peddle, but later on you have some knowledge that in the root cause analysis,  
26 something about the track was mentioned. I know you haven't read it, but that's your  
27 understanding?

28                  **MR. YANG LIU:** I think, yes, that's part of my -- my discussion with

1 members of the rolling stock team. I think elements of the track was looked at.

2 **MR. MANU CHOWDHURY:** Right. So, Mr. Liu, may we just go to  
3 a second document now please? It is a presentation from Alstom. The document ID is  
4 very complicated. It is RTC 00079996.0003.0002. Mr. or Madam Operator, let me  
5 know if you need that again. I know it's a big clunky.

6 **--- EXHIBIT No. 159:**

7 RTC00079996.0003.0002 – OTT LRT Axle Spline  
8 Connection Report – 30 June 2021

9 **MR. MANU CHOWDHURY:** Mr. Liu, this is an Alstom presentation  
10 dated June 30, 2021. So, this would be about five weeks, I guess, before the first  
11 derailment. Have you seen this presentation before?

12 **MR. YANG LIU:** I saw it as part of the preparation for today.

13 **MR. MANU CHOWDHURY:** And the presentation focused on  
14 spline wear problems and, in particular, if we go to page 5, please? Sorry, we may just  
15 have to scroll down a bit. I think it is page 6. There it is. Thank you. Yes, that's the  
16 diagram.

17 So, sir, a spline, as I understand it, is a component with grooves  
18 that connects the two axle hubs, as you can see in this diagram. Would that be fair to  
19 say?

20 **MR. YANG LIU:** Yes, that's right.

21 **MR. MANU CHOWDHURY:** Okay. And it is fair to say that spline  
22 is an integral component of the broader axle system because it is connecting the two  
23 hubs; is that fair to say?

24 **MR. YANG LIU:** Yes, that's fair to say.

25 **MR. MANU CHOWDHURY:** Okay. And just so we are clear, you  
26 told Commission counsel during your first interview that what you know about the first  
27 derailment is that the axle hub came apart, right? So, one of axles just fell off. That's  
28 correct, right?



1                   **MR. YANG LIU:** Right.

2                   **MR. MANU CHOWDHURY:** Right. Now, if we could just go back,  
3 Mr. Operator, up to the fifth page, please, just a slight above it? Thank you. It sets out  
4 in this slide that there were some issues with the spline. In particular, you can see the  
5 third bullet, there was studies done in Istanbul about it, and certain conclusions were  
6 reached. Do you see that, sir?

7                   **MR. YANG LIU:** Yes.

8                   **MR. MANU CHOWDHURY:** Okay. And -- sorry, I don't mean to be  
9 flipping back and forth between slides, but if we just go back to the next slide again with  
10 the diagram, and you see below exactly in yellow the third box, what the problems are.  
11 There's power dissipation in spline wear and grease mitigation of the extremities. So,  
12 these were issues that were thought of that would emanate from the spline issue. Now,  
13 sir, I presume that, you know, Istanbul doesn't have identical track systems as Ottawa  
14 does, would that be fair to say?

15                   **MR. YANG LIU:** I don't know the track system in Istanbul. I don't  
16 think it is 100 per cent comparable.

17                   **MR. MANU CHOWDHURY:** Right. It probably is reasonable to  
18 think that tracks in Istanbul were perhaps constructed differently than from the way they  
19 were constructed in Ottawa?

20                   **MR. YANG LIU:** I don't -- I mean ---

21                   **COMMISSIONER HOURIGAN:** Sorry, he's given you his answer,  
22 and it was a fair answer. He can't tell you what went on in Istanbul. So, I think you  
23 have to take the answer he's given you and move on, please.

24                   **MR. MANU CHOWDHURY:** Yes, Mr. Commissioner. If Mr.  
25 Operator, could we go to Slide 10, please? Apologies. It might be the next slide.  
26 Sorry, my numbering seems to be off from -- yes, this is it. Thank you,

27                   So, Mr. Liu, you know that to address this problem Alstom  
28 contemplated that there may be an axle redesign to be had, and this was the T20 axle,

1 correct?

2 **MR. YANG LIU:** Yes.

3 **MR. MANU CHOWDHURY:** And if we go to the next slide, please.

4 So, this was the T20 axle design that was thought of. And if we go to the -- I am pretty  
5 sure it is page 14. If we go to page 14, please, it will talk about the implant, or page 15.

6 And, Mr. Liu, in this slide, it speaks to the fact that in the Toronto  
7 context, the T20 axles are being implanted, correct?

8 **MR. YANG LIU:** Yes. I believe so, yes.

9 **MR. MANU CHOWDHURY:** And in Ottawa, with respect to Ottawa,  
10 it is in consideration. It is a V5 model that looks like is in place. Is that fair to say, sir?

11 **MR. YANG LIU:** So, in Ottawa, it is the V5 that is in service right  
12 now. It is not the same as the T20.

13 **MR. MANU CHOWDHURY:** Not the same as T20. So, sir, based  
14 on this presentation it is fair to say that Alstom knew that there was a spline wear  
15 problem, correct?

16 **MR. YANG LIU:** Yes.

17 **MR. MANU CHOWDHURY:** And that it was reaching a point where  
18 it was considering retrofits and, in fact, in some places, it had implemented such retrofit,  
19 correct?

20 **MR. YANG LIU:** For the spline, yes.

21 **MR. MANU CHOWDHURY:** Yes. And, sir, you already agreed  
22 with me that the spline is an integral component of the whole axle hub system, correct?

23 **MR. YANG LIU:** Yes, it is part of the whole axle hub system.

24 **MR. MANU CHOWDHURY:** Right. So, sir, just what I want to sort  
25 of get at is, as a general proposition, sir, you would agree with me that when the root  
26 cause analysis report is done, it rules out all sort of reasonable causes that may have  
27 precipitated a particular event, right?

28 **MR. YANG LIU:** Sorry, I don't understand the question.

1                   **MR. MANU CHOWDHURY:** Sure, sir. So, if a root cause analysis  
2 is thorough, right ---

3                   **MR. YANG LIU:** Yes.

4                   **MR. MANU CHOWDHURY:** --- it is comprehensive ---

5                   **MR. YANG LIU:** Yes.

6                   **MR. MANU CHOWDHURY:** --- it will set out that, you know, there  
7 may be one, two, three, four, five potential things that may have caused it.

8                   **MR. YANG LIU:** Yes.

9                   **MR. MANU CHOWDHURY:** We think number one caused it, and  
10 one through four didn't cause it. That would be a thorough analysis. Would that be fair  
11 to say, sir?

12                  **MR. YANG LIU:** It could be, yes. That will be -- could be a good  
13 root cause analysis, yes.

14                  **MR. MANU CHOWDHURY:** Yes. And if a root cause report does  
15 not mention at all a reasonable cause that a party has documented themes, then there  
16 are some reasons to say that perhaps that root cause analysis is not thorough; would  
17 you agree with that?

18                  **MR. YANG LIU:** I think I am -- okay, I think I understand where you  
19 are going. You are trying to see if there is a link between the spline and the hub, right?

20                  **MR. MANU CHOWDHURY:** So, sir, the link between the spline  
21 and the hub, I think you just told me that they are integral to it.

22                  **MR. YANG LIU:** Yes.

23                  **MR. MANU CHOWDHURY:** And what we know from this  
24 presentation alone is that the spline has a wear issue, fair?

25                  **MR. YANG LIU:** Yes, but it is completely different than the hub  
26 issues. These are, shall we say, two separate issues that were dealing with the same  
27 component.

28                  **MR. MANU CHOWDHURY:** Certainly, sir. And it may be an

1 entirely different issue, I am not pretending to be an engineering expert here, but all I  
2 am trying to ask you is, whether or not it's a different issue or not, for a report to be  
3 thorough, it needs to rule out reasonable alternatives; is that fair?

4 **MR. YANG LIU:** So, normally, in a root cause analysis report, you  
5 will identify different contributing factors like if you have the Ishikawa process or  
6 fishbone process, and then you would confirm or discount each of the potential factors.

7 **MR. MANU CHOWDHURY:** Correct. So, in other words, you  
8 consider alternative causes ---

9 **MR. YANG LIU:** Yes.

10 **MR. MANU CHOWDHURY:** --- and you then say this would not  
11 have caused this, but this may have; is that fair?

12 **MR. YANG LIU:** Yes.

13 **MR. MANU CHOWDHURY:** Okay. Sir, can I just ask you briefly  
14 about track maintenance a bit?

15 **MR. YANG LIU:** Okay.

16 **MR. MANU CHOWDHURY:** Do you remember telling Commission  
17 counsel in your interview that Alstom was responsible for all track maintenance?

18 **MR. YANG LIU:** Yes.

19 **MR. MANU CHOWDHURY:** Okay. So, just to understand that, if  
20 the track requires any grinding from regular wear and tear, that is Alstom's  
21 responsibility?

22 **MR. YANG LIU:** Yes.

23 **MR. MANU CHOWDHURY:** And that has been Alstom's  
24 responsibility since RSA, which is almost three years now. Is that fair to say, sir?

25 **MR. YANG LIU:** Yes.

26 **MR. MANU CHOWDHURY:** So, if there is rail corrugation that has  
27 occurred from usual track -- just the usual business of running trains, Alstom is to  
28 address that?

1                   **MR. YANG LIU:** Yes.

2                   **MR. MANU CHOWDHURY:** Okay. And, Mr. Operator, if we could  
3 just go to one more document, please? It's ALS 00136505. Oh, pardon me, sorry. It is  
4 0013605. So, sir, this is a track test that Alstom did from 2021. Are you familiar with  
5 this document?

6                   **MR. YANG LIU:** I don't believe I've seen this presentation before.

7                   **MR. MANU CHOWDHURY:** Okay, sir. We don't need to go to it if  
8 you are not aware of it. Can I just ask, sir, while we are on the issue of track  
9 maintenance, if there is an issue with construction contractor defect, correct? If Alstom  
10 says, look, we think this track issue is because of construction contractor defect, the  
11 issue -- sorry, the task at that point is that Alstom still completes the maintenance work  
12 necessary on the track, but then there is a question of who indemnifies for that task. Is  
13 that a fair assessment, sir?

14                  **MR. YANG LIU:** I cannot confirm that because in my role as  
15 engineering manager, that would be a very contractual topic, and my ---

16                  **MR. MANU CHOWDHURY:** You are just not familiar with this.  
17 That's totally understandable, sir.

18                  **MR. YANG LIU:** It's not really my responsibility to say who is  
19 actually responsible for it.

20                  **MR. MANU CHOWDHURY:** Of course. Of course. Can I just ask  
21 you a few, sort of, quick follow up things from Ms. Peddle with respect to validation  
22 testing? Sir, you gave evidence to Ms. Peddle that back in May 2019, lots of  
23 modifications were being made to the vehicle as part of validation testing, correct?

24                  **MR. YANG LIU:** Yes.

25                  **MR. MANU CHOWDHURY:** And at that time, you said there were  
26 actually hundreds of changes being made to the vehicle; isn't that right?

27                  **MR. YANG LIU:** Yes.

28                  **MR. MANU CHOWDHURY:** And you said that each changes were

1 sort of memorialized by an individual number, correct?

2 **MR. YANG LIU:** Yes.

3 **MR. MANU CHOWDHURY:** And you called those numbers "fix-a-  
4 problem", correct?

5 **MR. YANG LIU:** Yes.

6 **MR. MANU CHOWDHURY:** Or FAP.

7 **MR. YANG LIU:** Correct.

8 **MR. MANU CHOWDHURY:** And at one time, there were about 600  
9 changes coming in at one time. Do you recall saying that to Commission counsel, sir?

10 **MR. YANG LIU:** I think what I sort of meant was that there was a  
11 large number of FAP changes in the pipeline. I don't think at any time it was all coming  
12 at once. It normally comes in one at a time or two at a time.

13 **MR. MANU CHOWDHURY:** I see. But there was nevertheless a  
14 very substantial number of changes?

15 **MR. YANG LIU:** Yes.

16 **MR. MANU CHOWDHURY:** And, sir, in your experience, the  
17 number and the extent of the changes were unusual, weren't they?

18 **MR. YANG LIU:** Yes.

19 **MR. MANU CHOWDHURY:** And you were coming up with -- sorry,  
20 you were encountering issues being identified during validation testing up until or close  
21 to the completion of testing; isn't that true?

22 **MR. YANG LIU:** Yes, there was changes throughout the whole  
23 validation phase.

24 **MR. MANU CHOWDHURY:** Right. And you told Ms. Peddle this  
25 already, that in view of the validation -- pardon me, in view of the modifications made  
26 during validation, there were a number of retrofits that had to be made, correct?

27 **MR. YANG LIU:** Yes.

28 **MR. MANU CHOWDHURY:** And, of course, retrofit triggers for you

1 certain non-regression tests?

2 **MR. YANG LIU:** Yes.

3 **MR. MANU CHOWDHURY:** And taken together, sir, that process  
4 took much longer than you perhaps initially anticipated; is that fair to say?

5 **MR. YANG LIU:** Yes.

6 **MR. MANU CHOWDHURY:** Can I just ask you briefly about the  
7 supplier issues? Now, on the Confederation Line project, Alstom had suppliers that  
8 were based in Canada and North America that were new suppliers for Alstom, correct?

9 **MR. YANG LIU:** Yes.

10 **MR. MANU CHOWDHURY:** So, you were working with them for  
11 the first time as suppliers?

12 **MR. YANG LIU:** I think either they were new or they were -- shall  
13 we say they were subsidiaries of known suppliers Alstom used to work with in Europe,  
14 but it was their local company or local partner that we were working with for the first  
15 time.

16 **MR. MANU CHOWDHURY:** Right. And when you are working with  
17 the subsidiary, you were receiving components that were not to the quality or the level  
18 that you previously saw from their parent company, let's say, is that fair to say?

19 **MR. YANG LIU:** Can we say there were a lot of issues with these  
20 components that were delivered to us that we had to work through? Yes.

21 **MR. MANU CHOWDHURY:** Okay. So, certainly, this had an  
22 impact on both the quality and the timeline of the project, fair?

23 **MR. YANG LIU:** On the timeline, yes. Quality wise, I mean, yes,  
24 there was a lot of unexpected workload. We had to basically -- equipment that is  
25 supposed to be working was not working, so we had to go through changes to the  
26 integration process, or shall we say we needed to go through additional design changes  
27 to get it to work.

28 **MR. MANU CHOWDHURY:** Right. And you already gave

1 evidence about what it was like for you to do serial testing. Just one line I want to pick  
2 up a little bit on is, you mentioned to Commission counsel that when you started this  
3 tenure doing the serial testing, you didn't think you had sufficient number of people. Do  
4 you recall that?

5 **MR. YANG LIU:** When I started serial testing, we had enough  
6 people. It's just as we were progressing with all the design changes and the  
7 compressed schedule, we realized we didn't have enough people.

8 **MR. MANU CHOWDHURY:** Right. So, you had to double your  
9 team, correct?

10 **MR. YANG LIU:** Yes, that's correct.

11 **MR. MANU CHOWDHURY:** And what was the number that you  
12 went from, sir?

13 **MR. YANG LIU:** Oh, I think we went to 15 technicians, 15 to 18  
14 technicians in the end.

15 **MR. MANU CHOWDHURY:** Okay. Well, thank you, Mr. Liu, on a  
16 Friday afternoon for taking the time to speak with us. Mr. Commissioner, no further  
17 questions for me.

18 **COMMISSIONER HOURIGAN:** All right. Thank you. STV?

19 **MR. THEO MILOSEVIC:** STV has no questions for this witness  
20 either.

21 **COMMISSIONER HOURIGAN:** All right. Thank you. Thales?

22 **MR. PETER MANTAS:** Counsel for Thales here, Mr.  
23 Commissioner. We have no questions of this witness.

24 **COMMISSIONER HOURIGAN:** Mr. Jeanes, Transportation Action  
25 Canada?

26 **--- CROSS-EXAMINATION BY MR. DAVID JEANES:**

27 **MR. DAVID JEANES:** Yes. Thank you very much. Hello, Mr. Liu,  
28 I am David Jeanes, J-E-A-N-E-S, for Transport Action Canada. I only have a few



1 minutes to ask you questions. I am going to focus on the testing, the serial testing. You  
2 talked about the use of the light maintenance bay and I'm wondering whether you had  
3 any opportunity in that bay to actually operate the motor or the gear box, the brakes?  
4 Like, did you have any dynamometer capability, or could you actually do that, or was it  
5 just statistic testing?

6 **MR. YANG LIU:** We could do what we call a bump test, which is to  
7 move the train at extremely low speed for a few metres.

8 **MR. DAVID JEANES:** So, basically, just to check that the wheels  
9 can turn?

10 **MR. YANG LIU:** Check that the circuits are working, and the  
11 traction is working, yes.

12 **MR. DAVID JEANES:** All right. And similarly, testing within the  
13 MSF, you said that you were limited to 15 kilometres an hour, so to test a normal  
14 operating speed or maximum speed you really had to be out on the main line?

15 **MR. YANG LIU:** Correct.

16 **MR. DAVID JEANES:** And you said that you were only given use  
17 of a single track from Cyrville to Blair; is that correct?

18 **MR. YANG LIU:** That's correct.

19 **MR. DAVID JEANES:** And that's only about 1.7 kilometres, so it's  
20 a lot less than – what we heard originally was that the plan was for four kilometres of  
21 double-track?

22 **MR. YANG LIU:** Yes.

23 **MR. DAVID JEANES:** And you could only have one train in  
24 service and you only had a couple of switches; you were not negotiating any complex  
25 track work; it was straight, mostly a straight and level track?

26 **MR. YANG LIU:** Yes, and I want to add one more detail that I  
27 think it was maybe missed. So at the beginning we had access to one track, a single  
28 track from Cyrville to Blair. Around I think a year later in 2017 we got the westbound

1 track as well from Cyrville to Blair. So for the latter half of the construction phase there  
2 was two – shall we say two tracks available from Cyrville to Blair.

3 **MR. DAVID JEANES:** But for some time you had a very limited  
4 testing ---

5 **MR. YANG LIU:** And for your question; we – in the serial test,  
6 actually we only wanted to run on a straight track because we needed to test the  
7 acceleration and braking rates and we needed a straight track to do it, and that's why  
8 we only used the straight section from Cyrville to Blair and we didn't cross the switch as  
9 part of the serial test.

10 **MR. DAVID JEANES:** Okay. And in terms of testing one vehicle  
11 after another, did you – was the access from the MSF to Cyrville difficult initially? That  
12 wasn't part of the energized line that had been turned over to you?

13 **MR. YANG LIU:** Well, we always start with the train under its own  
14 power to the test track.

15 **MR. DAVID JEANES:** Okay. But it still must have taken time to  
16 take one train out of service and get the next test train into position?

17 **MR. YANG LIU:** Yes, yes.

18 **MR. DAVID JEANES:** Okay. I have another question about the  
19 use of the wheel lathe and wheel flats. Mr. Slade indicated that the trains had about  
20 10,000 kilometres on average at RSA, probably, and I think you indicated that reprofiling  
21 happens normal – scheduled reprofiling is about 30,000 kilometres. So with typical  
22 operation several months between reprofiling of a particular train?

23 **MR. YANG LIU:** Yes.

24 **MR. DAVID JEANES:** And therefore you would expect for 34  
25 vehicles, to have several days of lathe time available for each scheduled reprofiling, so  
26 maybe one wheel lathe was considered to be sufficient for expected wheel  
27 maintenance? If it had been working?

28 **MR. YANG LIU:** I mean I know that we – it was always a fight to

1 get access to the wheel lathe and whether it's because of the unplanned reactive wheel  
2 reprofiling or it was because, you know – it was one of our blocking points in the winter  
3 time. Whether – if everything was working perfectly, whether one wheel lathe would  
4 have done it, I would have to look at the data.

5 **MR. DAVID JEANES:** Okay. And my last question. You talked a  
6 fair bit about emergency braking and that an emergency brake application, unlike  
7 normal braking, there is no wheel slip detection. So it's like driving a car where the anti-  
8 lock braking system stops working if you're doing a hard braking; right?

9 **MR. YANG LIU:** That's correct.

10 **MR. DAVID JEANES:** And in fact, that may not be the most  
11 effective way of stopping a vehicle, to allow a wheel slip to happen?

12 **MR. YANG LIU:** To allow a wheel slip to happen? Well ---

13 **MR. DAVID JEANES:** Because a car driver is always told that it's  
14 better to pump the brakes in an emergency rather than to have a hard braking. And I'm  
15 just wondering, is it really normal that train brakes like this would disable the anti-lock  
16 function or the wheel slip detection in an emergency brake application?

17 **MR. YANG LIU:** As far as I know it is common and it's the normal  
18 solution to deactivate wheel slide protection, your emergency brake.

19 **MR. DAVID JEANES:** Okay. Because you had mentioned that  
20 and that was the point that was interesting. Okay, I think that's my time for questions,  
21 so thank you very much.

22 **COMMISSIONER HOURIGAN:** Thank you, Mr. Jeanes. Next is  
23 witness counsel, so Alstom's counsel?

24 **MS. LENA WANG:** Good afternoon, Mr. Commissioner. It's Lena  
25 Wang, counsel for Alstom, we have no questions for this witness.

26 **COMMISSIONER HOURIGAN:** All right. Any re-examination?

27 **MS. CARLY PEDDLE:** No re-examination, thank you.

28 **COMMISSIONER HOURIGAN:** Mr. Liu, I want to thank you for

1 testifying today; your answers were very helpful to the Commission. You're excused.

2 The Commission is down until Monday at 9:00 a.m.

3 **MR. YANG LIU:** Thank you.

4 **THE REGISTRAR:** Order, all rise. The Commission is adjourned  
5 until Monday at 9:00 a.m.

6 --- Upon adjourning at 5:17 p.m.

7  
8 **C E R T I F I C A T I O N**  
9

10 I, Mathieu Bastien-Marcil, a certified court reporter, hereby certify the foregoing pages to  
11 be an accurate transcription of my notes/records to the best of my skill and ability, and I  
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15 sont une transcription conforme de mes notes/enregistrements au meilleur de mes  
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