

# Ottawa Light Rail Commission

Steven Nadon  
on Thursday, April 21, 2022



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OTTAWA LIGHT RAIL COMMISSION  
RTM - STEVEN NADON  
APRIL 21, 2022

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--- Held via Zoom Videoconferencing, with all  
participants attending remotely, on the 21st day  
of April, 2022, 1:00 p.m. to 3:48 p.m.

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1 COMMISSION COUNSEL:

2 Christine Mainville, Co-Lead Counsel Member

3 Mark Coombes, Litigation Counsel Member

4

5 PARTICIPANTS:

6 Steven Nadon: Rideau Transit Maintenance

7 Kartiga Thavaraj, Jean-Claude Killey, Mannu

8 Chowdhury: Paliare Roland Rosenberg Rothstein

9 LLP

10

11 ALSO PRESENT:

12 Helen Martineau, Stenographer/Transcriptionist,

13 Laila Butt, Virtual Technician

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INDEX OF EXHIBITS

NO. /	DESCRIPTION	PAGE
1	Curriculum vitae of Steve Nadon.	17
2	Document entitled "Trial Running Test Procedure". Document number OTT377178.	39

\* \* The following is a list of documents undertaken to be produced, items to be followed up, or questions refused. \* \*

INDEX OF UNDERTAKINGS

The documents to be produced are noted by U/T and appear on the following page/line: 13/24.

1 --- Upon commencing at 8:30 a.m.

2 CHRISTINE MAINVILLE: Thank you,  
3 Mr. Nadon. The purpose of today's interview is  
4 to obtain your evidence under oath or solemn  
5 declaration, for use of the Commission's public  
6 hearings.

7 This will be a collaborative interview  
8 such that my co-counsel, Mr. Coombes, may  
9 intervene to ask certain questions.

10 If time permits, your counsel may also  
11 ask follow-up questions at the end to the  
12 interview. The interview is being transcribed,  
13 and the Commission intends to enter the  
14 transcript into evidence at the Commission's  
15 public hearings, either at the hearings or by  
16 way of procedural order before the hearings  
17 commence.

18 The transcript will be posted to the  
19 Commission's public website along with any  
20 corrections made to it, after its entered into  
21 evidence.

22 The transcript, along with any  
23 corrections later made to it, will be shared  
24 with the Commission's participants and their  
25 counsel on a confidential basis before being

1 entered into evidence. You'll be given the  
2 opportunity to review your transcript and  
3 correct any typos or other errors before the  
4 transcript is shared with the participants or  
5 entered into evidence.

6 Any nontypographical corrections made  
7 will be appended to the transcript.

8 And finally, pursuant to section 33(6)  
9 of the Public Inquiries Act 2009, a witness at  
10 an inquiry shall be deemed to have objected to  
11 answer any question asked of him or her upon the  
12 grounds that his or her answer may tend to  
13 incriminate the witness or may tend to establish  
14 his or her liability to civil proceedings at the  
15 instance of the Crown, or of any person. And no  
16 answer given by a witness at an inquiry shall be  
17 used or be receivable in evidence against him or  
18 her in any trial or other proceedings against  
19 him or her thereafter taking place, other than  
20 prosecution for perjury in giving such evidence.

21 And as required by section 33(7) of  
22 the Act, you are advised that you have the right  
23 to object to answer any question under section 5  
24 of the Canada Evidence Act.

25 If that is all fine we can jump in.

1 STEVE NADON: Sounds good.

2 CHRISTINE MAINVILLE: So I know you've  
3 held a few roles Stage 1 on Ottawa's LRT. Could  
4 you speak to those? And we can bring up your  
5 resume in a second, but could you give us a  
6 sense of the roles that you held on that  
7 project?

8 STEVE NADON: Sure. So I started with  
9 OLRT April 2017 I believe, the title at that  
10 point was Power Supply and Distribution Engineer  
11 or Test Lead Engineer.

12 So that role was essentially to test  
13 the traction power substations on the main line  
14 for the trains.

15 Subsequent to that, about a year,  
16 maybe a year and a bit into that role I was  
17 promoted to be the Deputy Testing Commissioning  
18 Manager when the previous deputy resigned. Held  
19 that shortly, that position.

20 I was then asked to take the Testing  
21 Commissioning Manager role, so I held that  
22 position for quite some time within OLRT-c. So  
23 managing essentially -- not just the power  
24 supply and distribution tests specifically, but  
25 more the entire suite of commissioning tests for

1 the entire system.

2 In that role we were -- late in the  
3 project I was promoted to the Testing  
4 Commissioning Director, so added a few more  
5 responsibilities; while I gave my lead tester,  
6 test engineer, if you want, the -- my old role  
7 of the Testing Commissioning Manager. So as a  
8 team we completed the testing commissioning of  
9 the system.

10 After that -- so those were all my  
11 roles on OLRT.

12 CHRISTINE MAINVILLE: And just to be  
13 clear, when you say "OLRT" I think it's what  
14 I'll be calling "OLRTC", which is OLRT  
15 Construction, right?

16 STEVE NADON: Yes. I should have  
17 added constructor to that.

18 So that at that point -- those were  
19 all of my positions within OLRTC, the  
20 constructor.

21 And -- I'm going say it was April of  
22 2020, I think, RTG asked me to step into a role,  
23 Project Manager, to help deliver the remediation  
24 plan that was put forward, some deficiencies  
25 that existed that the City wanted resolved.



1                   So we had a list of, I believe, 14  
2 major topics that needed resolution. So I took  
3 that responsibility. A lot of the systems that  
4 they were looking to get corrected were things  
5 that I had been familiar with so it made sense.

6                   And later that year in the late summer  
7 early fall, September 2020, RTG, RTM, they both  
8 got together and thought my expertise in what I  
9 developed through the years on the project would  
10 benefit if they promoted me to the role of  
11 maintenance director for RTM.

12                   CHRISTINE MAINVILLE: And who held the  
13 role of RTM Maintenance Director prior to you?

14                   STEVE NADON: Tom Pate.

15                   CHRISTINE MAINVILLE: Maybe we'll  
16 bring up your resume then. You performed these  
17 roles as part of an employee of SNC Lavalin,  
18 correct?

19                   STEVE NADON: Yes. Actually all of  
20 the roles except the last one.

21                   CHRISTINE MAINVILLE: You're no longer  
22 working for SNC?

23                   STEVE NADON: Correct. I had to  
24 resign my position with SNC Lavalin to take on  
25 the Maintenance Director's role. The way the

1 structure works is there is different roles for  
2 different parties of the consortium. And the  
3 Maintenance Director was a role held by the  
4 Dragados ACS organization.

5 CHRISTINE MAINVILLE: So do you now  
6 work for Dragados?

7 STEVE NADON: ASC Infrastructure  
8 Canada, yes.

9 CHRISTINE MAINVILLE: Okay. So it's  
10 clear that your resume is not completely  
11 up-to-date, correct?

12 STEVE NADON: No. I don't plan on  
13 looking for another job so I don't update my  
14 resume unless I'm looking.

15 CHRISTINE MAINVILLE: Is it accurate  
16 to say I think you were with RTG as Project  
17 Manager from April 2020 to September 2020, is  
18 that correct?

19 STEVE NADON: That's correct, yes.

20 CHRISTINE MAINVILLE: So you were with  
21 RTM at the time of the derailment?

22 STEVE NADON: That's correct.

23 CHRISTINE MAINVILLE: And in terms of  
24 your background and experience, you have some  
25 engineering background?

1                   STEVE NADON:   Engineering  
2                   technologist, college educated.

3                   CHRISTINE MAINVILLE:   And was this  
4                   your first rail project?

5                   STEVE NADON:   Yes, it is.

6                   CHRISTINE MAINVILLE:   And you'll see  
7                   on the first page where you talk about the daily  
8                   reviews of trial running in the last bullet  
9                   point under "Testing and Commissioner Director"?

10                  STEVE NADON:   Yes.

11                  CHRISTINE MAINVILLE:   So, and we'll  
12                  talk about this in detail a bit later on, but  
13                  would you have been on the trial running review  
14                  team?

15                  STEVE NADON:   There was two review  
16                  teams.   There was one that reviewed the data,  
17                  but I was not on the formal team that did all of  
18                  the pass/fail criteria for the day, that was at  
19                  a senior level.

20                  I was evaluating the, call it the  
21                  alarms, for example, that would have come in in  
22                  the previous 24-hour period to explain what the  
23                  origins of those alarms might have been.

24                  CHRISTINE MAINVILLE:   What do you mean  
25                  by "alarms"?

1           STEVE NADON: Again, the system has  
2 thousands of alarm points. We monitor  
3 everything from door opening and closing to  
4 e-tel. For example, if someone pressed an e-tel  
5 that generates a pop-up alarm. So all of those  
6 need to be described whether they function  
7 correctly, whether they perform as expected.

8           CHRISTINE MAINVILLE: Would you,  
9 nevertheless, have been apprised of the scoring  
10 for the day and the results from trial running.

11           STEVE NADON: No. We presented how we  
12 thought it should be scored, in the sense that  
13 we said, we think that's a pass, we think that's  
14 a fail.

15           But there was another -- so we had all  
16 our data collected -- or analyzed, I think it  
17 was between 4:00 a.m. and I think our cutoff was  
18 10:00 a.m. And then there was a subsequent  
19 meeting at the senior level where they presented  
20 to senior people at OC Transpo, I believe, that  
21 put the final numbers together.

22           But, no, we weren't allowed to know  
23 that information.

24           CHRISTINE MAINVILLE: So who was  
25 gathering your data? What were you relying on?

1                   STEVE NADON: Who was gathering my  
2 data or who was I presenting it to?

3                   CHRISTINE MAINVILLE: No. How were  
4 you gathering your data? What was the source of  
5 your data?

6                   STEVE NADON: There's numerous -- so  
7 we have -- we had inputs from various  
8 individuals that would come in at 4:00 a.m. and  
9 just collect the log files, for example, the  
10 alarm tables of what alarms came in.

11                   They would then show us specifically  
12 at what time that alarm was generated. So we  
13 would then investigate at what was going on at  
14 that time. We would look at CCTV footage and  
15 say, Oh, that trigger point happened because  
16 somebody walked through a sensor, or somebody  
17 left the door open, or a variety of things.

18                   So there was a team of about three or  
19 four gathering the data, and then we were a team  
20 of four people maybe analyzing the data.

21                   CHRISTINE MAINVILLE: All from OLRTC?

22                   STEVE NADON: RTM and OLRTC. I  
23 believe the one gentleman was familiar with the  
24 databases for RTM, which is the IMIRS, or  
25 information management system that captures all

1 the work orders.

2 CHRISTINE MAINVILLE: I think it's  
3 IMIRS, is that correct?

4 STEVE NADON: Yes.

5 CHRISTINE MAINVILLE: Would you get  
6 any data from Alstom?

7 STEVE NADON: I don't think I was  
8 looking at any train data, that might have been  
9 a different group. I'm trying to think if there  
10 was anything.

11 Again, they were more reliant on my  
12 background, being the field elements. I don't  
13 know if there was another group that was looking  
14 at train-specific information.

15 CHRISTINE MAINVILLE: I see. So  
16 you're not looking at the train-specific  
17 information?

18 STEVE NADON: No, no. That wasn't my  
19 section at all.

20 CHRISTINE MAINVILLE: Counsel, if you  
21 could look into whether there was another team  
22 responsible for the rolling stock and advise us  
23 as of that that would be good.

24 U/T MR. KILLEY: We can do that.

25 CHRISTINE MAINVILLE: So in terms of

1 whether something is a pass/fail, you're looking  
2 at events on the line but that don't relate to  
3 the trains?

4           STEVE NADON: We were looking at the  
5 system, we weren't looking at train-specific,  
6 right? Because this trial running was not  
7 specifically looking at how did the trains  
8 perform, it was how did the network -- was it a  
9 live system? Did everything work as designed  
10 and functioned?

11           Was the signaling system providing the  
12 proper signals for the train to operate? Was  
13 the power supply, for example, putting out the  
14 proper voltage for the train to operate? During  
15 this trial running period, it was -- the City  
16 had -- I won't say "hired", they dispatched, I  
17 guess, employees to test -- again I'll go back  
18 to these e-tels, the information telephones.  
19 They would open various doors. They would ride  
20 all the elevators and escalators. So we would  
21 be monitoring and looking for failures of all of  
22 those systems.

23           So, for example, if they were in a --  
24 I'll use just a station called "Blair" as an  
25 example. If they were riding the elevator and

1 it stopped, there would be alarms that we would  
2 be produced and we would have to analyze those  
3 alarms, if they existed. And we'd say, Why did  
4 that elevator stop? And maybe, again, don't say  
5 this happened, but as an example we might be  
6 able to see on the footage that somebody was  
7 jumping up and down on the elevator and that  
8 stops the elevator.

9 Those were the things that we were  
10 looking to investigate. Any of the anomalies  
11 that reported we were doing to deep dive to say,  
12 Oh, that happened because of this, or that  
13 happened because of that.

14 CHRISTINE MAINVILLE: And we will come  
15 back to that, but just to finish off with your  
16 resume. Could you go down under "Deputy Testing  
17 and Commissioning Manager"? Right there you  
18 have the fourth bullet point, "updating the  
19 testing and commissioning schedule".

20 STEVE NADON: Yes.

21 CHRISTINE MAINVILLE: Is that the  
22 overall schedule, including the rolling stock  
23 and all aspects of testing and commissioning?

24 STEVE NADON: No. That's literally  
25 the testing and commissioning series of tests.



1           There was about -- I would have to go  
2 back and review it, maybe 212, 215 individual  
3 tests that needed to be scheduled. So that was  
4 the schedule I was updating.

5           So any time we'd completed one I  
6 flagged it. Any time there was a new system  
7 available we'd say, Okay, we can schedule that  
8 in and it's available for testing on  
9 such-and-such a date.

10           CHRISTINE MAINVILLE: But did you say,  
11 no, it did not include rolling stock?

12           STEVE NADON: No. It didn't include  
13 rolling stock.

14           CHRISTINE MAINVILLE: And why was  
15 that? Was is just an entirely separate --

16           STEVE NADON: There was a whole  
17 different department doing rolling stock.

18           CHRISTINE MAINVILLE: And the last  
19 bullet, "Integrating the commissioning plan with  
20 plans of train control and vehicle suppliers".

21 Do I understand it to be --

22           STEVE NADON: So some of my specific  
23 tests in the testing and commissioning portion  
24 involved needing trains, and trains need to run  
25 with the train control system. So I needed to

1 rely on that system to be functional and  
2 available to us so that we could complete --  
3 integrate those into the testing commissioning  
4 plan.

5 CHRISTINE MAINVILLE: Okay. So let's  
6 bring this down and file that as Exhibit 1.

7 EXHIBIT NO. 1: Curriculum vitae of  
8 Steve Nadon.

9 CHRISTINE MAINVILLE: Can you tell me  
10 more about the integration piece, and what you  
11 might have tested that related to integrating  
12 the rolling stock with other parts of the  
13 network?

14 STEVE NADON: Sure. So one of the  
15 early ones is I needed a vehicle to actually  
16 test the "vehicle envelope" to ensure that the  
17 guideway was assembled with proper dimensions.  
18 So the OCS was at the proper heights, the posts  
19 were not too close to the sides of the vehicles,  
20 if you want, so that you had proper distance  
21 between the vehicle itself on the track and any  
22 fixed objects that are constructed within it.  
23 And that was one simple test.

24 We ran the entire line. People walked  
25 beside the vehicle at 5 kilometres per hour. We

1 were taking section-by-section looking to see if  
2 there was any interferences.

3 So that was one tests where you  
4 integrate the vehicle within a test that you're  
5 trying to look for for additional data.

6 There were a variety of other tests.  
7 Some were specific system-wide testing where you  
8 would -- we had to test, for example, the  
9 duration of travel from one station to the very  
10 end. So we had to meet that deadline, which  
11 was, I believe 23, minutes, if I recall  
12 correctly.

13 So again, that would have been an  
14 integration test where you would need all of the  
15 systems functioning, because you were now  
16 relying on a train operating at line speed, so  
17 full speed. So to do that you had to make sure  
18 that your train control system was activated and  
19 operating first.

20 CHRISTINE MAINVILLE: So that would  
21 have involved Thales' systems, right?

22 STEVE NADON: That's correct.

23 CHRISTINE MAINVILLE: And so would you  
24 say most of Thales' testing would have related  
25 to your testing and commissioning plans, as

1       opposed to the other department?

2                 STEVE NADON:   How do I -- I'm not sure  
3       how I answer that one.

4                 I wouldn't say most of Thales', but at  
5       the end the sum, let's say, the final Thales'  
6       configuration I would say yes.  Without their  
7       final control system in place a percentage of my  
8       tests could not be executed until that system  
9       was available.

10                CHRISTINE MAINVILLE:  And what can you  
11       tell me about the delays that there were to  
12       being able to perform those integration tests?

13                STEVE NADON:  Delays of what type?

14                CHRISTINE MAINVILLE:  Let's start  
15       here.  Do you recall what the original plan for  
16       integration testing was?  And by that I mean  
17       specifically -- well, in particular relating to  
18       the integration of Thales' signaling system with  
19       the rest of the -- with the trains and the  
20       infrastructure.?

21                STEVE NADON:  I don't recall anything  
22       around specific dates.  Again, we were executing  
23       the tests suites, if you want.

24                We would execute as many tests as we  
25       could with the available systems that we had.

1 And that's why, you know, you mentioned earlier  
2 with updating the schedule, that was essentially  
3 the juggling act, right? Here is where we are  
4 today. What systems are available next week or  
5 a week from now that we can say, okay, we can  
6 now integrate this test that we hadn't completed  
7 yet into the schedule? If you're looking for  
8 specific dates, I can't --

9 CHRISTINE MAINVILLE: No, no, not  
10 specific dates. But do you recall -- well,  
11 first of all, the RSA date was pushed back,  
12 right? The original RSA date?

13 STEVE NADON: I honestly don't  
14 remember what the original date was.

15 CHRISTINE MAINVILLE: So you would not  
16 have been apprised of what you were tracking  
17 towards in terms of a deadline?

18 STEVE NADON: No. I was tracking my  
19 overall tests as a suite, as I say, 200 -- I can  
20 remember what the total was but I know it was  
21 over 200. And again, some of them were very  
22 simple tests that we did right away. If they  
23 didn't involve any trains they could be  
24 accomplished and they were well off the list a  
25 long time ago.

1           But as the pieces all fit together the  
2 tests became more sophisticated as integration  
3 tests with various systems. So those tests  
4 became the later stages of the project, if you  
5 want.

6           CHRISTINE MAINVILLE: And do you  
7 recall those stages becoming compressed as a  
8 result of general -- other delays on the  
9 project?

10          STEVE NADON: The only thing that  
11 comes to mind was I know we -- again, I don't  
12 remember dates specifically, but I know we had a  
13 lot of -- we had everything from Blair to U of  
14 Ottawa completed where we could do all the tests  
15 that we wanted.

16          We had the problem near the Rideau  
17 station with the sinkhole. It kind of bisected  
18 everything we could do. We couldn't get any  
19 equipment over to the other side near Tunney's  
20 pasture to do any testing because we had a  
21 massive chunk of the rail missing. There was no  
22 track and there was no OCS in place. So I know  
23 there was a big scramble.

24          We came up with a plan to try and  
25 expedite things and move a few trains. And I

1 can't even remember if it was one or two trains  
2 that we brought over to Tunney's pasture. And  
3 in doing so we managed to complete one track  
4 that we could use but there was still a section  
5 of power -- there was no OCS for about 50  
6 metres, if I recall correctly.

7 But we decided that -- the way the  
8 trains rolled on steel rails, once the rain had  
9 momentum you could let it coast through the  
10 tunnel and it would probably get us beyond that  
11 gap where we had no power, which is what we  
12 ended up doing.

13 So once we did that, the train was at  
14 Tunney's, I now had a vehicle to use at Tunney's  
15 to execute between Tunney's and Lyon Station  
16 that I could then continue a lot of my  
17 commissioning of the various systems in that  
18 regard. So that's what we did. And I think the  
19 train stayed there for a month or maybe two.

20 CHRISTINE MAINVILLE: On the other  
21 side of the tracks?

22 STEVE NADON: On the other side, yeah.  
23 And we had to put security at the station to  
24 monitor that train every night so it wasn't  
25 subjected to graffiti.

1                   CHRISTINE MAINVILLE: And is that how  
2 most of the integration testing was performed  
3 ultimately on those two --

4                   STEVE NADON: Most of it, because it  
5 all had to come together. This was  
6 specifically -- I think I described that OSC  
7 test that I was telling you earlier about, the  
8 vehicle envelope. We hadn't done that because  
9 we couldn't get to that side of Tunney's.

10                   So once we got beyond the gap in the  
11 tunnel, if you want, the sinkhole area, now I  
12 had the pieces I could use to execute my  
13 testing.

14                   So there was -- everything had to be  
15 started at that point. We had to do the OCS  
16 integration testing, we had to walk beside the  
17 train. A lot of tests that needed to be  
18 accomplished.

19                   But, again, we still had now these  
20 numbers. Fifty percent of the track was done  
21 because we had all the pieces there. We had  
22 another 30 percent from Tunney's to Lyon. And  
23 then we still had that 20 percent in the middle  
24 that needed to be done at some point. So at the  
25 end of the road all these pieces got put



1 together when everything was 100 percent  
2 complete, and then we could do what we call the  
3 "seamless, full integration tests", which is the  
4 one I mentioned earlier.

5           There's no way you could do, for  
6 example, the end-to-end travel time if you don't  
7 have a chunk of track, right? You couldn't  
8 run -- Oh, we got to U of Ottawa in 17 minutes,  
9 let's write that down and keep that block and  
10 then do another tests and add them up. No, that  
11 wasn't aloud. You had to do a complete seamless  
12 run. So those tests could only be done once all  
13 of the infrastructure was completed.

14           CHRISTINE MAINVILLE: And whenabouts  
15 would you say that was? I don't mean to quiz  
16 you on dates. So if revenue service ultimately  
17 was August 30th or September 2019, how far in  
18 advance of that would you estimate the full  
19 track was available for testing?

20           STEVE NADON: I honestly don't  
21 remember, it would be a guess. Earlier that  
22 spring maybe.

23           CHRISTINE MAINVILLE: It was that same  
24 year?

25           STEVE NADON: Oh, definitely that same

1 year, yeah. Sorry, I didn't know you were  
2 looking for that level of granularity.

3 CHRISTINE MAINVILLE: I could have  
4 told you I know the answer but you're giving the  
5 evidence.

6 So I take it you would have been  
7 working with Thales on these integration tests?

8 STEVE NADON: Yeah, I suppose you can  
9 say we were working with them. I mean, they  
10 provided me their system, right. So I had the  
11 overview of their system in the sense that they  
12 said, Steve, Our equipment is ready. It will  
13 operate correctly. So were they involved with  
14 that integrated tests? No.

15 None of the subs were -- we were  
16 independently verifying their systems, if that  
17 makes sense.

18 CHRISTINE MAINVILLE: Got it.

19 STEVE NADON: In the commissioning  
20 department.

21 CHRISTINE MAINVILLE: Are they  
22 witnessing?

23 STEVE NADON: In some cases we did. I  
24 don't ever recall having an Alstom person on  
25 board. I'm trying to remember if I had a Thales

1 person on board, I don't recall. We had the  
2 City on all of the tests, they had witnesses.

3 So, again, so OLRTC were executing the  
4 test. I had myself and my test team. I always  
5 had a witness because we always had two boxes to  
6 check on our side. We had RTM as a witness as  
7 well because they were going to be maintaining  
8 it so they had an interest ensure that all of  
9 the testings were completed. And then we had  
10 the City.

11 And I think we also had a member of  
12 the independent certifier, seems to ring a bell.  
13 We had someone from RTG there at some points as  
14 well.

15 CHRISTINE MAINVILLE: Would you ever  
16 be reporting back to Thales on the results?

17 STEVE NADON: Not unless there was a  
18 failure. If we had a test that failed -- I  
19 mean, I recall one that did fail actually, it  
20 was called the -- gee, what was the -- something  
21 about a clock.

22 We had a clock that synchronizes  
23 everyone's clocks so they were all working on  
24 the same time stamp. I just can't remember that  
25 test. But that one took a while for Thales to

1 get their clocks in sync with our clocks, if  
2 that makes any sense to you.

3           They were using -- whether they were  
4 using a local time instead of universal standard  
5 time, I can't remember. But there was always  
6 something there. And that particular test took  
7 a little while. We tried it numerous times  
8 until Thales realized they found the bug in the  
9 software and they fixed it.

10           So we did have repeat tests. That was  
11 the whole idea behind testing. You test, you  
12 may fail, you have to figure out what failed,  
13 why, and then you go and get that corrected and  
14 then you re-execute that test.

15           CHRISTINE MAINVILLE: It's fair to say  
16 it's used by Thales to debug the system, so to  
17 speak?

18           STEVE NADON: Yeah, I think you can  
19 say that.

20           CHRISTINE MAINVILLE: So were there  
21 several software glitches like that or issues  
22 that had to be addressed during that phase?

23           STEVE NADON: I think during the  
24 testing and commissioning phase -- well, we kind  
25 of -- we did a lot of dry runs leading up to it,

1 right? So we kind of said, Let's do a what-if  
2 here. Are we ready for this test? Are we ready  
3 to invite the client? And that's what it  
4 amounted to. At the very end the formal test,  
5 if you want, was always witnessed by the client.

6 So we would sometimes have to do dry  
7 runs and say, No, something isn't right, let's  
8 look at what it was and then get it corrected.

9 Again, in 200-some-odd tests I would  
10 say, yeah, there might have been a lot of them.  
11 But a lot of them were repeat failures until we  
12 figured out what the problem was.

13 A lot of them were not always  
14 integration tests. We had a lot of failures of  
15 just -- the doors, for example. We tested all  
16 the doors on the system. So that's a very  
17 extensive test because it integrates the doors,  
18 the cameras, the SCADA control system. So all  
19 those systems integrate together.

20 But you would go to a station and  
21 maybe that door didn't exist yet because we were  
22 running that test. They hadn't mounted all the  
23 hardware. So we would only get about 90 percent  
24 of the test completed and we'd have to circle  
25 back and do the other 10 percent at a later

1 date.

2 CHRISTINE MAINVILLE: When you're  
3 reporting failures to Thales would you ever get  
4 feedback from them -- do you have any insight in  
5 terms of the -- their views of how this is  
6 going, or the system's readiness?

7 STEVE NADON: Yeah. We had -- I mean  
8 there was a weekly meeting with Thales, I  
9 remember that; that was one I attended.

10 At that point we were discussing, Are  
11 we ready for this section? Yeah, that rings a  
12 bell.

13 CHRISTINE MAINVILLE: Did they raise  
14 concerns about how the integration had gone up  
15 to that point?

16 STEVE NADON: Not that I can recall,  
17 no.

18 CHRISTINE MAINVILLE: Do you recall by  
19 the end of it whether Thales thought it was  
20 sufficient integration testing? I take it they  
21 passed all the requirements?

22 STEVE NADON: Yeah. Again, Thales is  
23 one of the safety systems, right? So it was  
24 very structured, very regulated. Nothing with  
25 their systems would be approved for use until

1 their safety department issued us a safety  
2 certificate.

3 So there was a lot of back-and-forths  
4 saying, No, you can't use that system. Or you  
5 can use it for testing but it's not -- for  
6 example, the switches, they'll take the switched  
7 on the main line as an example.

8 Thales controlled those switches  
9 remotely through their train control system; but  
10 until they certified that their train control  
11 system is up to the proper -- up-to-date, we'll  
12 call it, and when I say "up-to-date" I meant it  
13 has their latest software in place, vetted,  
14 validated, proven software. Only then would  
15 they allow us to -- I don't know if you're  
16 familiar with railway, but you can clamp a  
17 switch -- if you're going to -- you can use a  
18 switch, you can drive through a switch but you  
19 have to clamp it. Because if the control system  
20 is not certified a switch may move.

21 So you're not allowed to drive over a  
22 switch that doesn't give you a positive  
23 indication that it's in the proper orientation.  
24 So that was one thing with Thales, was, yeah,  
25 you can use the line, the switches work. You

1 can use them to -- you can turn on the switch  
2 machine and make it move your switch, but once  
3 it moves it from the tangent to turnout  
4 position, we then had to clamp that switch with  
5 a mechanical clamp. Because their system wasn't  
6 certified yet to say it's used for service.

7 So that was much later in the process  
8 when we were doing our integration testing.  
9 But, again, these are various stages. You still  
10 have to run along the -- even moving the  
11 equipment down the rail line, just a truck and a  
12 flatbed trailer, you have to go through the  
13 switches but you weren't allowed to use the  
14 train control system for that, you had to do the  
15 manual operation in clamping these switches.

16 CHRISTINE MAINVILLE: I take it, given  
17 that you had not performed this role before in  
18 respect of another rail project, is it fair to  
19 say that you don't have any comparators in terms  
20 of how long an integration testing period should  
21 be or how this one compared to other?

22 STEVE NADON: You're correct. I don't  
23 have that knowledge to say, this one took longer  
24 than another project. I don't have that  
25 experience.



1                   CHRISTINE MAINVILLE: And in terms of  
2 how the criteria was devised, where did that  
3 come from?

4                   STEVE NADON: So all of the tests that  
5 I was executing, all of these commissioning  
6 tests, if you want, were all designed by the  
7 engineering joint venture. So I was given the  
8 criteria.

9                   I didn't create the test. I was their  
10 field executor, if you want. Their engineers  
11 and their designers designed, who designed the  
12 entire system, the construction project, if you  
13 want, would say, To validate the train control  
14 system, as an example, you would have to do  
15 these specific tests.

16                   So I would have to read -- understand  
17 their methodology. I would quiz them. I was  
18 given the opportunity to talk and run through  
19 it. We had run-throughs with the engineering  
20 group saying, Do you guys understand what this  
21 means? Yeah, we had expertise within my team  
22 that knew what was required.

23                   But all of those tests were handed to  
24 us as a deliverable to execute. We were not the  
25 designers of the tests.

1 CHRISTINE MAINVILLE: And do you have  
2 any knowledge of how new or standard Thales'  
3 signaling system was?

4 STEVE NADON: I believe this is a  
5 mature system. It's used in other countries --  
6 well, it's used in Canada, in the Canada Line  
7 out in Vancouver, for one. So a lot of the  
8 documentation I was reviewing was actually  
9 Canada Line documentation.

10 Because the EJV joint venture that was  
11 producing all of, a lot of them worked on that  
12 project. So all of the pieces were brought  
13 over, if you want, I don't know if that's the  
14 right word, or integrated from that project. So  
15 it was similar technology or similar systems.  
16 So a lot of the tests were basically tests they  
17 had already executed on their system.

18 CHRISTINE MAINVILLE: You indicated  
19 there were two review teams. Your team would  
20 determine, based on your data, how you thought  
21 something should be scored as it was passed down  
22 and then there was a more senior level team.  
23 Did you have any concerns about what came out of  
24 the senior review team?

25 STEVE NADON: We were never told what

1 came out of the senior review team? I think  
2 that was one of the criteria for trial running.  
3 It was all secretive, behind closed doors and  
4 you'd only get an answer after the 12-day  
5 period, I think it was 12 days; whatever trial  
6 running was supposed to last.

7 CHRISTINE MAINVILLE: And you were  
8 testing these systems at the same time as the  
9 trial running period for the rolling stock,  
10 right? Everybody is doing --

11 STEVE NADON: Everything, yeah.  
12 Again, we were simulating service at this point,  
13 right? I don't remember how many trains we  
14 used, but it was -- you know, we would have to  
15 launch trains, they would have reduction trains,  
16 just like a normal schedule. We'd have to  
17 report on any failures or whatever findings  
18 there were.

19 It was just routine daily service  
20 simulation, without passengers on board.

21 CHRISTINE MAINVILLE: So what are the  
22 things that you would test? Did that include  
23 the station availability?

24 STEVE NADON: Yes. That's what I was  
25 telling you. When I talked about the City

1 dispersing people, whether it was employees or  
2 other people they hired, it was to test that  
3 station availability.

4 Ride the elevators, make sure the  
5 escalators were all up. Opening and closing of  
6 the stations, that was a function by RTM, for  
7 example, the control centre here. They have to  
8 open up the grills every morning prior -- to  
9 allow people to come into the station.

10 All of those activities that would be  
11 part of our normal -- what we call today our  
12 normal daily activity was all tested during that  
13 trial running period.

14 CHRISTINE MAINVILLE: What about  
15 maintenance delivery, were you involved in that?

16 STEVE NADON: No. Not on this, not  
17 until I became RTM's Maintenance Director.

18 CHRISTINE MAINVILLE: You say you had  
19 no insight into the senior review team, what  
20 would you know about what criteria was being  
21 applied by them?

22 STEVE NADON: I think there was a  
23 score card but that's just something I'm  
24 remembering. I don't know what it looked like.  
25 I don't know if it was -- you know, I don't

1 know. I can't remember. I just remember  
2 hearing him talk about a score card system. I  
3 don't know if I was just -- I can't remember if  
4 my portion I was reporting on was just one  
5 element of that score card or it was four  
6 different categories. I just can't recall that.

7 CHRISTINE MAINVILLE: So the score  
8 card is not something you would have been  
9 working off of?

10 STEVE NADON: No, no. Again, we were  
11 analyzing the data -- the alarms. We were  
12 explaining what had happened.

13 When the alarm came in, again we'll  
14 use station availability as an example. If we  
15 had an escalator that wasn't working my team was  
16 looking at the fault of the escalator. What did  
17 it report? Was it hydraulic oil? Did someone  
18 jump on it? What triggered -- did somebody  
19 press the E-stop? Because I think they were  
20 testing that as well.

21 If they just stopped the elevator with  
22 E-stop. The SCADA system that we have  
23 interrogates all of these central points and we  
24 would report back, Okay, that was at this  
25 location due to this activity.

1 CHRISTINE MAINVILLE: So you were  
2 involved in testing that system?

3 STEVE NADON: Yes. Yeah, every alarm  
4 point.

5 CHRISTINE MAINVILLE: I might bring up  
6 a document just to see whether you're familiar  
7 with it. It's called the "Trial Running Test  
8 Procedure" number OTT377178.

9 STEVE NADON: Based on what you said I  
10 don't know, but I can see what it looks like.

11 CHRISTINE MAINVILLE: So we understand  
12 that this was -- this set out at least some of  
13 the criteria that would have applied to trial  
14 running. Was this something that you would have  
15 been working off of at all, or been aware of?

16 STEVE NADON: I don't know if I  
17 remember that actual procedure, but I remember  
18 Will Allman. I was working with Will Allman on  
19 that team I was telling you about.

20 CHRISTINE MAINVILLE: Okay.

21 STEVE NADON: So he may have been  
22 directing us. I can't remember. He was the  
23 lead, if you want, and I was kind of reporting  
24 my findings to Will.

25 CHRISTINE MAINVILLE: Okay.

1                   STEVE NADON: So, again, he may have  
2 been working off of this road map, this  
3 document. Without reading the 19 pages I'm not  
4 sure.

5                   CHRISTINE MAINVILLE: If you go down a  
6 little bit you'll have date there, it's a  
7 July 31, 2019, document?

8                   STEVE NADON: Yes.

9                   CHRISTINE MAINVILLE: And maybe we'll  
10 just jump to page 15 and I'll ask you if you're  
11 familiar with that. This would be one of the  
12 types of tests you would run, station  
13 performance and station availability, correct?

14                   STEVE NADON: Yeah. I was not  
15 involved in any of the math that you see there.

16                   CHRISTINE MAINVILLE: So --

17                   STEVE NADON: Again, I was reporting  
18 on if there was failures in the station. I  
19 wasn't giving the score for the station.

20                   CHRISTINE MAINVILLE: Okay.

21                   STEVE NADON: I was reporting to  
22 somebody maybe to create this score that you're  
23 presenting.

24                   I was probably asked to analyze why  
25 did something not function in the station, for

1 example. And then I would have look into that  
2 and get somebody to go -- go to the station and  
3 look. Is it still a problem? Was it a problem?  
4 Was it the way somebody behaved at the station  
5 or is it truly a failure of a subsystem within  
6 the station?

7 CHRISTINE MAINVILLE: We can bring  
8 this down and file it as an exhibit just for  
9 identification purposes.

10 EXHIBIT NO. 2: Document entitled  
11 "Trial Running Test Procedure".  
12 Document number OTT377178.

13 CHRISTINE MAINVILLE: Is it fair to  
14 say then that you would have no knowledge of any  
15 changes to the criteria over the course of trial  
16 running?

17 STEVE NADON: I had no knowledge of  
18 that. Again, my role at trial running was  
19 analyzing the daily events.

20 The other team were discussing whether  
21 that day passed or not, and they wouldn't even  
22 tell us if there was a pass day.

23 CHRISTINE MAINVILLE: And what could  
24 you tell us about how the IMIRS system worked,  
25 and whether it was working with the



1 functionality? This is the IMIRS system

2           STEVE NADON: That IMIRS system is the  
3 work order system. So during the trial running  
4 period, for example, an that alarm gets  
5 generated, and, again, I hate to keep saying  
6 "alarm" because there are thousands of alarms on  
7 this system. So some of them are just  
8 informational and some of them are -- a sump  
9 pump, for example, if the water is high you get  
10 a high alarm.

11           So any of these alarms would be  
12 displayed on the operator's control down at the  
13 TOCC, the Transit Operation Control Centre.

14           So if they would get an alarm they  
15 would then go and enter a work order in the  
16 IMIRS system. IMIRS is how we are given the  
17 taskings, if you want, that there's a problem.  
18 It then pings a technician. It says, I've got  
19 this request for you to go and look at this  
20 particular problem. The clock started that the  
21 moment because it's time stamped.

22           Different alarms have different  
23 penalties associated with them. So you only  
24 have so many minutes to respond or hours,  
25 depending on the severity of type of alarm.

1           So all of that is tracked in the IMIRS  
2 system. So IMIRS -- the operator would enter  
3 the work order. That work order would go to the  
4 technician in the field, the technician would go  
5 and work on whatever that problem might be.  
6 Let's use the example of that escalator as we  
7 mentioned earlier. There's a work order that  
8 says, Escalator at Blair was stopped. Somebody  
9 would go to the station, they would see the  
10 E-stop had been pushed.

11           Certain activities our technicians can  
12 do, I think E-stop is one of them. We're  
13 allowed to restart an escalator if it's just  
14 pushed by the push button, E-stop. But if it's  
15 a sensor, if it's, again, somebody was jumping  
16 on the escalator, or somebody fell on the  
17 escalator and it jams one of the treads, only an  
18 authorized elevating device company can reset  
19 those alarms.

20           So we would then have to call in  
21 Schindler, he was RTM's maintainer for elevating  
22 devices. But then that work order would get  
23 closed at IMIRS and that would be the end of  
24 that particular work order.

25           So IMIRS did work throughout that

1 process because that's what I was reviewing the  
2 next morning. All of the work orders that got  
3 generated in the previous 24 hours, whether they  
4 were closed or not, whether they were critical  
5 alarms, whether they were informational alarms,  
6 and that was the summary that I was giving to  
7 Will Allman, and whoever else was on the group,  
8 to present to the senior team.

9 CHRISTINE MAINVILLE: And was it a  
10 component that was being tested itself?

11 STEVE NADON: Everything was being  
12 tested in the stations. As I say, the City had  
13 sent, I'm going the say, ten people to test  
14 various things in the system, which was actually  
15 a problem at one point.

16 We had to call them in and say, you're  
17 overexercising the system. Because what they  
18 were doing was they were going to a station and  
19 pressing the emergency telephone buttons.

20 So the way that the emergency  
21 telephone button works is, if you press that  
22 button it rings to the SCU, the security people  
23 at OC Transpo, but it also pops up the video so  
24 you can see who's maybe in distress. And it was  
25 two camera views, for each time you press the

1 e-tel two cameras would pop up.

2 What the City was doing, again, these  
3 ten people were in the station, they were  
4 pressing all the e-tels sequentially, as apposed  
5 to waiting for the one to come up where the guy  
6 could respond.

7 So at the other end the messages were  
8 not being -- the camera activations were not  
9 being displayed correctly because they were  
10 pressing too many sequential details. You had  
11 to let the system -- they weren't using it for  
12 it's intended purpose. They were just trying to  
13 do all their sweep of the station so they could  
14 go to the next station and do the same thing.

15 So we had to take a pause and talk to  
16 the City about that and say, Guys, you're not  
17 executing a real life situation here. You're  
18 trying to break it, or you're trying to get  
19 through it too quickly. You're not doing a true  
20 test.

21 So once they understood the rationale  
22 behind it then they started to operate it  
23 correctly. They would do one or two e-tels on  
24 each station. And they knew this test would go  
25 on multiple days, so the next station they would

1 do one or two. So they would kind of sample  
2 these details and opposed to pressing each and  
3 every one of them in sequence.

4 CHRISTINE MAINVILLE: Do -- I guess  
5 you have no awareness of what happened  
6 post-testing on that front?

7 STEVE NADON: As in at the end of  
8 trial running or the end of that day?

9 CHRISTINE MAINVILLE: No, after trial  
10 running entirely?

11 STEVE NADON: I assume we got our  
12 certificate and opened the line.

13 CHRISTINE MAINVILLE: But do you know  
14 how the City then went about -- I guess, did  
15 they continue sort of testing the work order  
16 system in terms of --

17 STEVE NADON: I see, in that regard.  
18 To this day we still do it. To this day they  
19 still send people throughout the stations and  
20 open all the doors, and press the e-tels from  
21 time-to-time. And if something doesn't work  
22 they write an IMIRS work order on it. Sorry,  
23 they don't write the IMIRS work order, they call  
24 it into our control centre, we open the work  
25 orders now. That's the new change we made,

1 because they were opening work orders for  
2 everything.

3 CHRISTINE MAINVILLE: So would you  
4 have only become aware of that once you started  
5 working for RTM?

6 STEVE NADON: That portion of it?

7 CHRISTINE MAINVILLE: The continued  
8 testing of these various --

9 STEVE NADON: Yeah, I guess. I really  
10 notice it now because all those messages come to  
11 me when things are not working. I'm definitely  
12 more aware. Was I aware before? I might have  
13 been but definitely now with RTM for sure I'm  
14 aware of it.

15 CHRISTINE MAINVILLE: But I guess  
16 immediately after service began would you have  
17 been involved in --

18 STEVE NADON: No, I wouldn't know  
19 anything on that because I was back on the  
20 constructor side on that point.

21 CHRISTINE MAINVILLE: So you don't  
22 know how it compares in more recent time to how  
23 it was immediately --

24 STEVE NADON: No, I don't.

25 CHRISTINE MAINVILLE: Okay. What --

1 have there been any discussions -- since you've  
2 been with RTM, have there been discussions with  
3 the City about this practice of testing -- or  
4 entering work orders for various issues on the  
5 system?

6 STEVE NADON: Well, the answer to that  
7 is yes. We've had numerous conversations with  
8 the City on it. We use the word "batched work  
9 orders".

10 What we typically see is the City,  
11 weekly, daily, I can't remember what their  
12 frequency is, they send their agents to various  
13 stations and they will do a sweep through the  
14 station. And again, they'll check all the  
15 doors, and they'll check a bunch of the e-tels.  
16 And what they do is they then go back to their  
17 office and they record their findings. And if  
18 they found six, seven, eight doors that didn't  
19 alarm or didn't open when they tried to use  
20 their access card, so they start entering these  
21 into the system.

22 So all of a sudden what happens is  
23 RTM, or through IMIRS, I will get ten work  
24 orders for one station. And now I've got  
25 penalties that are going to start to kick in for

1 each one of these work orders. So I have to sit  
2 there and say, okay, how do I triage? Which one  
3 is going to cost me the least amount of money?  
4 Which one do I have to hit first?

5 I don't have an infinite amount of  
6 staff. I don't have ten technicians that I can  
7 send to that one station where they each handle  
8 one door. I have to go and identify which door  
9 is going to cause me the most penalties. Is it  
10 a back-of-house door where I can say, You know  
11 what, City, your wrong. Don't worry about that  
12 one, it has another door protecting it. We're  
13 safe and secure.

14 If it's a main entrance door that  
15 doesn't open, that's a problem because now you  
16 can't get passengers into the station.

17 So, yes, that practice still goes on.  
18 We have had numerous conversations. We've asked  
19 the City if we can be apprised of what stations  
20 you're going to so that we can go with you.  
21 Because another thing that we found is that  
22 sometimes they don't actually actuate things  
23 correctly.

24 I'll use the example of the e-tels  
25 again. They'll go and press the button, they'll



1 press it really quick. Well, no, you have to  
2 depress that button. It's a telephone call.  
3 It's not a touch pad where you just have to  
4 lightly press. You have to actually make sure  
5 you press that all the way to the end so that  
6 the contacts are made.

7           So they would eventually -- they'll go  
8 in there and one of their field people will  
9 press it. But we'll go down -- we'll get the  
10 service call, we'll go there when we test it it  
11 works just fine. And they say, Well, why does  
12 it work for you but not for us? Well, the only  
13 thing we can determine is they didn't press it  
14 hard enough.

15           So we said, tell us when you're going,  
16 we'll go with you. We'll gladly walk the  
17 station with you. Give us your schedule. No,  
18 they refuse to do that.

19           CHRISTINE MAINVILLE: Who's your  
20 counterpart on the City on this?

21           STEVE NADON: My main counterpart is  
22 Matt Peters.

23           CHRISTINE MAINVILLE: And is any --  
24 has any reason been given to you about why they  
25 won't be more, I guess, collaborative on this

1 issue?

2 STEVE NADON: We've been  
3 back-and-forth a few times on it. It's -- you  
4 know, at one point we said, Just give us your  
5 schedule. Just tell us what days so we can  
6 prepare. If you don't want us to be there we'll  
7 hover around there so if something comes in at  
8 least we're in proximity. So they say, no, we  
9 cannot tell you what our schedule is. We can  
10 just tell you -- I think they told us maybe  
11 which stations. I think they said they're going  
12 to be testing two stations every week, if I  
13 recall. I would have to go back on my emails.

14 We just kind of gave up and said,  
15 okay, you guys say you're not going to flood us  
16 with work orders but you still do. We'll manage  
17 as best we can and dispute the penalties and say  
18 that it was induced because of batching work  
19 orders.

20 Again, you're not using the system as  
21 it's designed. You're going in and testing  
22 every frigging door to see which ones are at  
23 fault. You're not saying, I went in this door  
24 and it didn't work today.

25 CHRISTINE MAINVILLE: The perception,

1 at least, is that they're not performing that in  
2 good faith, is that --

3 STEVE NADON: I agree, yes.

4 CHRISTINE MAINVILLE: And there would  
5 be some financial incentive in terms of them  
6 doing it that way, given the resulting  
7 deductions on RTM?

8 STEVE NADON: Huge financial impact.

9 CHRISTINE MAINVILLE: And do you know  
10 what happened to the discussions or why those --  
11 like, did they stop for any reason?

12 STEVE NADON: They did not stop, they  
13 continued doing it. They seem to take a break  
14 when we complain a little bit.

15 When I say "take a break", they either  
16 don't validate as many individual components,  
17 but they still visit every site, they still  
18 generate reports. It still gets discussed every  
19 morning. We now have more meetings than we've  
20 ever had discussing silliness, from what I can  
21 tell.

22 What they call oversight is overreach,  
23 in my eyes.

24 CHRISTINE MAINVILLE: Overreach.

25 STEVE NADON: Overreach, yes.

1 CHRISTINE MAINVILLE: And when you  
2 said you had to prioritize work orders based on  
3 what's going to cost most money, in terms of how  
4 the events are calibrated, or what will incur a  
5 bigger penalty or not, would you say that that  
6 correlates to what requires the most urgent  
7 attention from a safety perspective or a true  
8 critical component?

9 STEVE NADON: So I'll give you an  
10 example of how things work. So the City  
11 sends -- let's take this example of a batch of  
12 work orders. I'll even minimize it and say  
13 there's only four.

14 So they've gone through a station,  
15 Blair, just for the sake of argument, and they  
16 come up with one e-tel and three doors that have  
17 given them some problem, they want to complain  
18 about or put a work order in.

19 So they send that to our help desk.  
20 Our help desk creates the three files. So  
21 again, we look at it and immediately e-tels are  
22 considered safety and security, that's the  
23 highest priority.

24 So that already is flagged by our  
25 control centre -- sorry, our help desk where

1 they put the proper "KPI", we call it, or "KPM"  
2 to set the proper criteria, it's a 30 minute  
3 response, a one hour or four hour application.  
4 I can't remember exactly but it's something of  
5 that nature.

6 And then the other three devices are  
7 doors. And depending on where the doors are, if  
8 it's a door to a communication room that's again  
9 safety and security because we don't want people  
10 breaking into our communication room. So it  
11 depends on the alarm. If the swipe card didn't  
12 work I don't care, I'm safe. I'll keep that as  
13 a lowest priority.

14 But if he was able to -- if the door  
15 didn't shut, the door stayed open, that to me is  
16 a safety and security on a communication room.  
17 Now, is that a safety and security on a broom  
18 closet? Which is what -- that's where we make  
19 that interpretation at our help desk.

20 So we put those criteria in and we set  
21 them -- there's a series of questions for each  
22 of these work orders that steps the help desk  
23 operator to be able to set the proper category  
24 for each of these doors. Well, what happens is,  
25 depending on criteria that is set, my technician

1 gets the notice on his iPad and he will go in  
2 and address all of these items in sequence.  
3 He'll do the higher priority ones first and the  
4 lower priority ones later.

5           And when I say "lower priority", some  
6 of the priorities are -- it's a seven day  
7 rectification, right? As long as it's completed  
8 in 7 days you're done. Well, let's say we do it  
9 in 24 hours. So we'll close the work order.  
10 Now, once the work orders are closed they all  
11 get sent to the City for oversight or review.

12           What the City has been doing is  
13 looking at those and saying, Oh, I disagree with  
14 how you catalogued that door. You catalogued  
15 that door as a non-urgent, non-critical and you  
16 said it would take up to 7 days to correct. You  
17 corrected it in 24 hours, great on you, but you  
18 didn't catalogue it correctly. We believe that  
19 is a safety-critical door. And we believe you  
20 should have used the higher penalty and only had  
21 30 minutes to get there and 4 hours to correct  
22 it.

23           So then they recatalogue the work  
24 order and now they asses us a penalty of  
25 thousands of dollars because we took 24 hours to

1 close a work order instead of the 4 that they  
2 have assigned to that door. And that's where we  
3 get into these disputes with the City. And this  
4 is done on -- I'm using a door as a simple  
5 example. I can list hundreds and thousands of  
6 work orders that have that problem.

7 And some of these work orders run us  
8 into the millions of dollars because they're  
9 communication alarms, for example, on a system,  
10 that is a known bug that one of the developers  
11 is working on correcting; it will be patched  
12 whenever.

13 So the work order doesn't get closed  
14 in a timely manner but it also has no impact on  
15 service. It's a known bug, if we call it, and  
16 it will spit out an alarm message that the  
17 City -- well, they don't know, right? Because  
18 they don't know how to treat communication  
19 failures, or communication alarms on the  
20 network.

21 So anything that's a communication  
22 alarm on the network to them is, oh my God, my  
23 network's failed and I have no communication.  
24 That's not really what's telling you. It's  
25 telling you that I was supposed to get a message

1 in one second, I didn't get it this second but  
2 it came in the next second, but I'm alerting  
3 you. There's an alarm there. So some of these  
4 don't get closed because they're in the  
5 investigation loop, we'll call it, with the  
6 vendor.

7 And when they finally do close they  
8 wrack up a penalty of hundreds of thousands. I  
9 think the highest one I've seen is 4.5 or  
10 \$5 million for some of these work orders, and  
11 they are just ridiculous.

12 CHRISTINE MAINVILLE: Do you have any  
13 from Mr. Peters about what, if any, marching  
14 order he has on this, or if it's individual  
15 discretion?

16 STEVE NADON: I can't speak to that.  
17 I don't know.

18 CHRISTINE MAINVILLE: And does this  
19 practice, or these practices on the City's end,  
20 does it have an impact on or prevent RTM from --  
21 or Alstom maintenance from focusing on things  
22 that might be more important to focus on from a  
23 maintenance perspective.

24 STEVE NADON: It definitely changes  
25 our focus because now all of the people are on



1 heightened alert. Because we've told them, just  
2 because your iPad tells it's a low priority,  
3 always keep in the back of your mind that the  
4 City can change that at any time and all of a  
5 sudden your penalties are going to be in the  
6 tens of thousands of dollars.

7           So we're always looking to say -- the  
8 technicians are always analyzing, well, which  
9 one do I work on first? Which one should I go  
10 to first? And when I'm telling you -- I gave  
11 you examples where they're all at one station.  
12 A lot of the times two of the work orders are at  
13 Blair and two of them at Tunney's Pasture. I  
14 have three technicians, you know. They don't  
15 all have the same knowledge. One guy might be  
16 my door expert, one guys might be my fire  
17 control system expert. So which ones do I send  
18 them to? So they're always juggling which work  
19 order is the best one to work on.

20           We always say safety first, service  
21 second, everything else is after that.

22           CHRISTINE MAINVILLE: And would you  
23 say that you're sufficiently resourced at RTM?

24           STEVE NADON: We're resourced for a  
25 normal work day, not when you have people that

1 are exercising the system daily to look for any  
2 flaw that might exist.

3 The way everybody interpreted this  
4 operational maintenance, if you want, was you  
5 would get a phone call that something did not  
6 work, not that the City would go into every  
7 station every day and test every system that's  
8 out there and tell you, Oh, this one may not  
9 work or this one might be a problem.

10 And again, I'm not going to say that  
11 all of the systems are failed when we get there.  
12 A lot of the times it's literally user  
13 interaction. The guy didn't press the button  
14 correctly, didn't latch the door behind him.  
15 Sometimes there's back pressure from doors  
16 because there's balancing issues with the HVAC  
17 system.

18 If you have trains going by as the  
19 door is closing there's back pressure that's  
20 pushed there. They say, Oh, sorry, you didn't  
21 design the system properly and should have taken  
22 that into account. Okay, if you want the play  
23 that card. But you shouldn't have closed the  
24 door when a train was running. I don't know, I  
25 can argue both points. If you retry the door a

1 second time it will work just fine.

2 CHRISTINE MAINVILLE: And what would  
3 you say about how Alstom is resourced for the  
4 maintenance piece?

5 STEVE NADON: That one I can say  
6 they're under-resourced, because a lot of times  
7 we call for resources on specific problems and  
8 they say, We don't have anyone on staff that day  
9 for that. Call it a power tech, or a guideway  
10 tech, or a signaling com tech. They often have  
11 gaps in their resourcing.

12 CHRISTINE MAINVILLE: And so how is  
13 that responsibility divide as a between RTM and  
14 Alstom in terms of who's responding to what?

15 STEVE NADON: They have the  
16 penalties -- the flow down is basically, RTG  
17 gets the invoice and the City pays RTG; RTG pay  
18 RTM a portion of that total pot; and then we pay  
19 Alstom their portion of that total pot.

20 All penalties get flowed down. So RTG  
21 doesn't take any penalties. RTM take all the  
22 penalties. But anything that's in Alstom's  
23 maintenance scope they take those penalties, so  
24 that gets withheld from their payment.

25 CHRISTINE MAINVILLE: So what is that

1 maintenance scope for Alstom as opposed to RTM?

2 STEVE NADON: So RTM have the  
3 stations, so elevators, escalators, most of the  
4 doors. The doors get a little tricky because  
5 there's the electronic portion of the door, so  
6 the SCADA control that we were talking about  
7 earlier and the IAC is the intrusion access  
8 control. So those electronic functions belong  
9 to Alstom.

10 The mechanical portion of a door, the  
11 door handle, the door hinges, those are RTM. So  
12 the doors we have a bit of a grey area  
13 sometimes.

14 So a lot of times what will happen is  
15 my team will get to the door, because we get the  
16 work order and we'll say, Oh, it's not a  
17 physical mechanical, we'll redirect the work  
18 order to Alstom.

19 What else is our scope? The HVAC  
20 system, so any of the mechanical systems that's  
21 RTM scope. Other than that, all of the systems,  
22 if you want, the train control systems, the  
23 trains themselves, the guideway, the power for  
24 the trains, all of that is in Alstom's scope.  
25 The CCTV cameras, all of those cameras are all

1 part of their maintenance.

2 CHRISTINE MAINVILLE: And does RTM  
3 still have oversight over that and over Alstom  
4 generally and their scope of work?

5 STEVE NADON: We have oversight in  
6 general because they're our sub, if that's what  
7 you mean, yes.

8 CHRISTINE MAINVILLE: Is there any in  
9 practice? Any oversight or -- I guess you  
10 determine where the work orders go, correct?

11 STEVE NADON: No, they're automatic.  
12 They have -- IMIRS goes directly to them as  
13 well. So those work orders are directly on  
14 their iPads, if you want.

15 CHRISTINE MAINVILLE: Even in terms of  
16 who's responding though? They would see it and  
17 know that it's them? They don't need to wait  
18 for you to tell them?

19 STEVE NADON: Yes, it is already  
20 defined that way, yes. Now I understand your  
21 question. So that's through the help desk.

22 So depending on the asset, whatever is  
23 entered as the asset that will direct whether  
24 that goes to my technician as an RTM technician  
25 or whether that goes to the Alstom subcontract.

1 CHRISTINE MAINVILLE: So who is at the  
2 help desk? Is that RTM?

3 STEVE NADON: RTM's help desk. We run  
4 the help desk. We get the inputs from the City  
5 and from ourselves. I mean, we open our own  
6 work orders from time-to-time, Alstom also do  
7 that as well.

8 If they're doing a routine  
9 maintenance, or a preventative maintenance,  
10 we'll call it, on one of the systems and  
11 discover a failure, they will call the help desk  
12 and say, Open up this work order because we  
13 found some defective device. So at least it  
14 gets recorded as a corrective action that needs  
15 to be followed up on.

16 CHRISTINE MAINVILLE: And so you're  
17 not co-located, RTM and Alstom, generally? I'm  
18 sure there's people all over but how does that  
19 work?

20 STEVE NADON: What do you mean  
21 co-located? We're all in the same building.

22 CHRISTINE MAINVILLE: You are? So are  
23 you at the MSF.

24 STEVE NADON: Correct.

25 CHRISTINE MAINVILLE: And who's your

1 main counterpart at Alstom?

2 STEVE NADON: Right now I would say  
3 I'm dealing with the infrastructure manager, the  
4 Operational Manager so Neil Steinke on the  
5 operation side, and I guess they hired a new  
6 General Manager which seems to be my counterpart  
7 mostly right now, Peter Keighron I believe is  
8 his name. He literally just started about a  
9 month ago. So I think I interface mostly with  
10 him at the moment.

11 CHRISTINE MAINVILLE: And you spoke  
12 about them seemingly being under-resourced.  
13 What would you say generally about Alstom's  
14 performance on maintenance?

15 STEVE NADON: Lacking would be a good  
16 term. Under-resourced. They seem to have a  
17 training -- a lack of knowledge is probably the  
18 biggest one.

19 These -- the technicians that they  
20 have, the power technicians, the guideway  
21 technicians, the comm technicians seem to be  
22 lacking diagnostic or troubleshooting skills. I  
23 don't know if that's just that they don't  
24 understand the entire system they've been hired  
25 to maintain, or if their management is only

1 pigeonholing them in to certain aspects, I can't  
2 put my finger on that one yet.

3 CHRISTINE MAINVILLE: Have you seen  
4 any improvements over time.

5 STEVE NADON: It's been in waves.  
6 There was some early improvement and then it  
7 kind of disappeared. They lost a lot of people.  
8 They brought in some new people. Since Peter's  
9 been here, this new General Manager, I've seen  
10 an improvement. And they recognize it, they  
11 told us they're working on resourcing. They  
12 found that that was a problem.

13 They have lost a lot of staff, a lot  
14 of key staff. I would say. A lot of knowledge  
15 is gone so I think it's going to take time to  
16 build that back up.

17 CHRISTINE MAINVILLE: Is that  
18 Mr. Peters or others as well that would have  
19 reported that they're working on building up?

20 STEVE NADON: No, Mr. Peters is on the  
21 city side.

22 CHRISTINE MAINVILLE: Sorry.

23 STEVE NADON: Mr. Keighron, yes.

24 CHRISTINE MAINVILLE: So that  
25 information you have comes from him about them



1 trying to do better?

2 STEVE NADON: Yes.

3 CHRISTINE MAINVILLE: And would you  
4 say, you know, if Alstom's performance is  
5 lacking, is that not really RTM's concern at  
6 then end of the day because the penalties will  
7 flow down, or is there more concern than that?

8 STEVE NADON: No, I personally am very  
9 concerned because -- and this is thrown at me  
10 more than once from the City, and I agree with  
11 the statement. And it's, the City's contract is  
12 with RTM. You guys chose Alstom as your sub.  
13 You manage your sub the way you want.

14 I'm paraphrasing my chats with Matt  
15 Peters when he and I talk. He says, I don't  
16 care how you get the job done but I'm talking to  
17 you, Steve, because you're my contractor. How  
18 you deal with it is your problem.

19 So we take a personal interest here at  
20 RTM to make sure that Alstom does their job. We  
21 have actually increased our in-house support to  
22 basically greater -- to have great better  
23 experience on the system so that we can help  
24 Alstom along. We can give them our guidance and  
25 our wisdom of the network.

1 I have personally brought in people  
2 that I worked with on OLRTC are now in my  
3 departments as subject matter experts, we call  
4 them, so that Alstom can draw on that knowledge.

5 We know what we built, we know what we  
6 maintain, we're just not the hands-on maintainer  
7 because we've subbed that over the Alstom. But  
8 since they're not doing it I had my people step  
9 in to help them, show them what they need to do,  
10 show them where they can find certain things and  
11 show them how this particular system works.

12 So we've had a huge hiring, I guess is  
13 what you -- or information gathering by bringing  
14 in some key people that worked on the  
15 construction side of the project, and keep them  
16 now on RTM's payroll to support Alstom because  
17 we're just not getting the delivery we expected  
18 out of the maintenance contractor, and the work  
19 still needs to get done. At the end of the day  
20 I still need to maintain it.

21 CHRISTINE MAINVILLE: In terms of when  
22 you arrived at RTM in 2020, what was the state  
23 of play at that point into time in terms of your  
24 assessment at both RTM, and then we can speak  
25 about Alstom.

1                   STEVE NADON: We were transitioning  
2 into this new oversight, or call it -- before I  
3 arrived I was still talking with RTG. RTM, RTG  
4 we're all still one happy family because we're  
5 all the same entities, right. The owner  
6 structure, or the corporate structure. So they  
7 all have a vested interest to keep everybody  
8 informed.

9                   So, you know, while I was performing  
10 this remediation role at RTG as a project  
11 manager, I knew that RTM were looking to  
12 restructure because the maintainer just wasn't  
13 maintaining. When I say "the maintainer" I am  
14 pointing to Alstom in this case, but RTM is  
15 still responsible.

16                   So these discussions were in the works  
17 before I joined. How do you think we should  
18 adopt here, Steve? What should we be doing?  
19 And that's what I said, We need to bring in key  
20 people. So we brought in a key track person who  
21 was the track engineer on the construction side.  
22 I brought in a power supply and distribution  
23 person. He was my testing commissioning lead  
24 for power and supply distribution when I left  
25 that role and became the TNC manager. We just

1 recently brought in our system engineer who  
2 knows everything about the network and the  
3 systems and the SCADA system.

4           These three individuals have now taken  
5 all of that knowledge and brought it back to  
6 RTM. So we can step in when Alstom is not doing  
7 their job, or Alstom is deflecting and saying, I  
8 can't do my job because I don't have this piece  
9 of paper. We can say, Okay, here is that piece  
10 of paper. You say you don't have the drawing?  
11 I have the people now who can say, I have the  
12 drawing, it's right here. What's your next  
13 excuse, guys?

14           So we worked as a group to change the  
15 RTM model, if you want, as opposed to just  
16 being -- RTM was only supposed to be a -- the  
17 facility maintainer and all the rest was to be  
18 Alstom. So they only had a very small portion  
19 of technical people and a few managers to  
20 oversee everything. But now we've got almost a  
21 team lead -- not a team lead, a subject matter  
22 expert on every facet of the business that  
23 Alstom had to maintain for us.

24           CHRISTINE MAINVILLE: Has that  
25 improved things?

1                   STEVE NADON: It's greatly improved  
2 things. I think things are getting -- the  
3 closure is quicker now. The understanding of  
4 the problem is quicker. Where Alstom had no  
5 clue. They were like headless chickens, just  
6 didn't know how to resolve issues.

7                   CHRISTINE MAINVILLE: Did you  
8 understand them at the outset to have -- to not  
9 have the experience for maintenance? Like what  
10 explains their lack of readiness?

11                   STEVE NADON: I'm going to take you  
12 back a few years, I don't know if you want to  
13 hear this long saga.

14                   But as the Testing and Commissioning  
15 Manager, a lot of the staff that Alstom have on  
16 the technical side, the power techs, for  
17 example, the signal and comm techs, and some of  
18 the guideway techs, actually worked for me in my  
19 testing commissioning role.

20                   But as Alstom was starting to ramp up  
21 their group a year before revenue service, they  
22 put out job offers to have -- and all of my  
23 people obviously were applying to these jobs  
24 because that's where the next step would have  
25 been. They learned the system, they go to

1 Alstom and now they maintain it for 30 years and  
2 everybody's happy. It's a great big  
3 relationship.

4 So early on they had a really good  
5 pool of people. They had very knowledgeable  
6 people, because I trained most of them. They  
7 worked for me, they learned the system.

8 The problem became -- I was under the  
9 impression that that year that Alstom took them  
10 away from me, I requested to Alstom, I said,  
11 Great. I'm glad that so-and-so got a job with  
12 you. I'm happy, I'm thrilled for them. But can  
13 you give them back to me and I'll keep using  
14 them for on-the-job training. And they said,  
15 No, our job starts on RSA. Our contract says  
16 RSA is the first day we're allowed to work on  
17 the system. I say, you're not really working,  
18 you're learning. I'm giving you on-the-job  
19 training; and they wouldn't do it. I said, Okay  
20 that makes it more difficult. So they did  
21 nothing for a year.

22 CHRISTINE MAINVILLE: You mean leading  
23 up to RSA?

24 STEVE NADON: Correct, leading up to  
25 RSA.

1 CHRISTINE MAINVILLE: To prepare?

2 STEVE NADON: To prepare for the  
3 maintenance.

4 So the day RSA occurred we said, All  
5 right, we're open, guys. Now it's your turn to  
6 maintain the system. They said, Oh, hang on, we  
7 don't think we should maintain that system yet  
8 because there's a two-year warranty period. The  
9 OLRT construction have offered a two-year  
10 warranty period. We don't want to touch  
11 anything. If we touch it now you're going to  
12 say we broke it and void the warranty.

13 So we got into this really  
14 back-and-forth over any of the items that Alstom  
15 would say, No, we don't want to touch that  
16 because if we touch it we're responsible for it  
17 now and you're going to void the warranty.

18 And then they started writing letters  
19 about constructor defects, CC defects.  
20 Everything was a CC defect. If an e-tel didn't  
21 work that was a CC defect, it should have worked  
22 for two years. It should be covered under the  
23 warranty. So they just refused to do any work  
24 for another two years.

25 So now I'm starting to see Alstom

1 actually engaged to do the maintenance,  
2 they're -- we've seen procedures. We've seen  
3 them go out to do preventative maintenance. The  
4 problem is, all these people that had the  
5 knowledge gave up on Alstom, they left. All of  
6 the guys that were my original trained and knew  
7 the system, they got fed up.

8 I had conversations with some of them  
9 and they said, I just can't do it any more.  
10 Their hands are tied. They want to do work,  
11 their management won't let them. They know what  
12 needs to be done. Management says, No, don't  
13 touch that because if you touch that we're now  
14 responsible for it. And this is the fight and  
15 the battle that we're in.

16 CHRISTINE MAINVILLE: And in terms of  
17 the trial running period, the maintenance was  
18 being evaluated at that point, perhaps not by  
19 you, but how then -- if Alstom was not really  
20 engaged, as you described it, until RSA, how  
21 could they test for readiness at that point on  
22 the maintenance piece?

23 STEVE NADON: I don't recall that side  
24 of it. I know the RTM side definitely, I was  
25 station availability. I recall some exercises.



1 I think they did some stimulators, simulated  
2 failure of -- I'll use another elevator --  
3 escalator down at Tunney's. It was how long  
4 does it take to get a technician on site, kind  
5 of thing. There may have been the same on  
6 vehicles, I just don't recall that aspect of it.

7 CHRISTINE MAINVILLE: You mean you  
8 don't know whether Alstom was engaged in that in  
9 respect of things other than the stations?

10 STEVE NADON: Yeah, I don't. They  
11 definitely -- again, the station would have been  
12 under RTM's scope for sure, everything else I  
13 just don't recall.

14 I don't know if there was any  
15 simulated failures that they had to respond to.  
16 I would assume there were, I just don't recall  
17 them.

18 CHRISTINE MAINVILLE: And how was the  
19 backlog when you arrived at RTM in 2020? Was  
20 there a lot of backlog in terms of these work  
21 orders and other things that had piled up?

22 STEVE NADON: There's always backlog  
23 in work orders. Was there lots? There's always  
24 lots. Is there more now? Yes, because I'm  
25 entering more now. That's the only way that the

1 City wants to track everything.

2 So we have, for example, an annual  
3 report from an engineering company that does  
4 what they call the station evaluation. I'll  
5 just use that, I don't know if that's exactly  
6 the report. But we have an outside engineer  
7 that walks through and does a complete  
8 evaluation of the condition of the station --  
9 ah, "Station Conditioning Report", that's the  
10 word I was looking for.

11 So anything that goes in that report  
12 we would have taken that as a work order in the  
13 past. Well, now I've directed my staff to say,  
14 every single item he has in his report I want  
15 those as individual work orders so we can track  
16 them one at a time. So again, the backlog is  
17 larger but it's larger because we're entering  
18 more, if that makes any sense.

19 CHRISTINE MAINVILLE: What about the  
20 maintenance plans and the general organization?  
21 I know you talked about a restructuring  
22 happening after you arrived, but otherwise was  
23 there -- did the plans make sense to you? Were  
24 they sufficient or were improvements to be made  
25 there as well?

1                   STEVE NADON: So the preventative  
2 maintenance plans are pretty well defined within  
3 the OEM documentation.

4                   Where I found a big problem was Alstom  
5 would take the operating manuals, which define a  
6 set of criteria from the manufacturer on what  
7 they should do for preventative maintenance, and  
8 they would create their own WMS, work method  
9 statement.

10                   And somebody has paraphrased the OEM  
11 manual. So what was in the OEM manual not every  
12 step made it into Alstom's equivalent  
13 documentation.

14                   So we found in some of our informal  
15 audits or some of our formal audits as well, and  
16 just our job oversights, we would quiz Alstom  
17 technicians. Like, I'm very familiar with some  
18 of the systems and I would say, When did you do  
19 this particular step at a switch heater, for  
20 example. They would say, Oh, we didn't do that.  
21 I said, Well, the OEM manual says you're  
22 supposed to check the resistance of the heating  
23 elements. He says, Oh, we don't do that. And  
24 he was correct. I looked at their work method  
25 statements and, sure enough, it wasn't in there.

1           So somebody had manipulated some of  
2 their work method statements to not capture  
3 everything that was in the OEM documentation.  
4 That, to me, was just bizarre. Why would you  
5 create your own manual when you already had one  
6 that existed. I understand that Alstom wanted  
7 to put their letterhead so that their people  
8 could see it, but they weren't following all of  
9 the steps within the documentation.

10           CHRISTINE MAINVILLE: Is that still  
11 the case today?

12           STEVE NADON: We brought a lot of  
13 these things to their attention, because we're  
14 now auditing their work method statements in  
15 detail. The subject matter experts that I  
16 talked about, again, know the subject, know the  
17 OEM manuals, and are scrutinizing these things  
18 closely and saying, Guys, 25 percent of the  
19 documentation is not reflected in your WMS,  
20 please upgrade it. So that's happening through  
21 our audits, our formal audits our oversight.

22           So the message is getting through,  
23 it's getting better, but it's not all cleaned up  
24 yet.

25           CHRISTINE MAINVILLE: I think we might

1 take a break.

2 -- RECESSED AT 2:25 P.M. --

3 -- RESUMED AT 2:41 P.M. --

4 CHRISTINE MAINVILLE: Could you speak  
5 a little bit about the -- your knowledge of what  
6 winter testing was done? So going back to  
7 testing and commissioning for a moment. Of  
8 course you were not involved in the rolling  
9 stock, but on the broader network.

10 STEVE NADON: Specific winter testing,  
11 I can't even remember if we had the one that's  
12 -- I know we had switch heater testing. There's  
13 an SAT test, a SAT testing on the functionality  
14 of the switch heaters.

15 There was an integration test on the  
16 rolling stock, I'll call. There's two parts to  
17 it. One was -- they call it water fording, so  
18 how much water a train could drive through; and  
19 then a snow test, how much snow a train could  
20 drive through. That's the only test I can  
21 recall having executed.

22 CHRISTINE MAINVILLE: Were there any  
23 concerns about the switch heater.

24 STEVE NADON: During the testing there  
25 was not. All of the problems came after the

1 fact. I was actually witness on the SAT test by  
2 the vendor, and it went well. I mean, you know,  
3 we had some mechanical bolts and things missing,  
4 but those were all addressed, but the actual  
5 functionality worked quite well.

6 The problems developed only later when  
7 we had snow. I mean, we did -- the SAT didn't  
8 happen in the snow, first of all, it happened --  
9 I can't remember if it was spring or fall. I  
10 know it wasn't summer. It was cool but not  
11 cold. There was no snow.

12 But the SAT is designed to simulate  
13 winter conditions. If there's no snow, for  
14 example, you take heat measurements, you take --  
15 you use freeze spray, for example, to trigger  
16 what they call the snow sensor. So the test was  
17 designed to be able to test in any weather  
18 condition. So that testing went well.

19 During the service after the fact --  
20 actually not even during the service, during the  
21 testing and commissioning of other systems we  
22 had to utilize the switch heaters because we had  
23 to keep the switches clear of snow so we could  
24 operate them, whether that was a manual  
25 operation, that's a hand crank I mentioned

1 earlier, or whether that was through a train  
2 control system, that's when we first started to  
3 see problems with the heaters themselves.

4 So I undertook a campaign to have them  
5 all reworked by a local electrical company,  
6 because we found a lot of shoddy workmanship in  
7 the assembly, and that was admitted by Spectrum,  
8 the manufacturer.

9 The issues that we found we pointed to  
10 their attention. Wires were pulling out of  
11 terminal blocks, wires were not stripped  
12 properly. So we brought that to their attention  
13 and they came good and hired this local  
14 electrical company to do all this work on their  
15 behalf, which I supervised or validated after  
16 the fact. And all of that rework was done to  
17 our satisfaction. That was winter of 2018  
18 maybe.

19 CHRISTINE MAINVILLE: So this is prior  
20 to -- during testing?

21 STEVE NADON: Exactly.

22 And then in the winter of 2019 -- so  
23 we had already started RSA at that point. Again  
24 we had some switch heaters that had failures,  
25 some elements that had burned out. And I worked

1 with Alstom to give them all of my knowledge and  
2 say, Guys, this is what I've learned over the  
3 last two years as part of testing commissioning.  
4 What switch heater behaviour did, what it didn't  
5 do.

6 We would get reports that a switch  
7 heater on such a switch failed. And I would  
8 say, Great, show me some evidence. I want  
9 photographs. I need you to tell me what it  
10 didn't do, where it didn't clear the snow. And  
11 I could never get that out of Alstom. All I  
12 could get is, It didn't work. I said, Fine. I  
13 just need to know -- tell me what I can go to  
14 the manufacturer with? Show me evidence of  
15 where the snow is melting and where it's not.  
16 And I just could never get that data.

17 CHRISTINE MAINVILLE: I'm right that  
18 the trains wouldn't have run on the entire line  
19 in the winter prior to RSA, correct?

20 STEVE NADON: No, no, we ran in the  
21 winter. We had to clear snow and we were doing  
22 testing. The train had run.

23 CHRISTINE MAINVILLE: On the line but  
24 not on the full line? Given that it wasn't --

25 STEVE NADON: This was in 2019? No, I



1 would think -- no, we probably didn't have the  
2 full line that early. No, you're right. We  
3 probably didn't run down at the Tunney's Pasture  
4 area. I would say we definitely went from Blair  
5 to U of Ottawa for sure in that winter -- let's  
6 call it early winter 2019, right? So January,  
7 February, March timeframe.

8 CHRISTINE MAINVILLE: Do you know what  
9 dynamic winter testing was done then? I guess  
10 that's what you're referencing?

11 STEVE NADON: Exactly. Some of my  
12 testing was done in the winter. We did the  
13 pantograph interaction, as we call it, the  
14 vehicle envelope. All that dynamic testing was  
15 -- some of it was done in the winter I recall.  
16 What part of the winter? I don't know. We  
17 didn't have to walk through two feet of snow,  
18 but I recall walking the track stepping in snow  
19 while we were testing these trains.

20 CHRISTINE MAINVILLE: And did some of  
21 the testing criteria relate directly to the  
22 winter?

23 STEVE NADON: No, just the two tests I  
24 mentioned earlier. The one that I can recall,  
25 so switch heaters. And then the only other test

1 specific that I can remember for train winter  
2 testing, there was one test called -- you know,  
3 I can't remember what the name of the test was  
4 but there was one to say how much snow a train  
5 could drive through. And the test was either  
6 incorrectly identified, because I said, This  
7 seems odd. It had written 40 centimetres deep  
8 snow. And is said, That doesn't make any sense  
9 to me. So I think it had been a typo and it was  
10 supposed to be 4 centimetres.

11 But anyway, we went back-and-forth  
12 with Alstom and I said, Absolutely not. We're  
13 not putting our trains on the line with 40  
14 centimetres of snow. We'd never do that. So I  
15 think it was a typo that was in the test. So  
16 that was reflected in an update and the test  
17 results, and the testing commissioning report  
18 reflects that.

19 CHRISTINE MAINVILLE: Because you  
20 would expect that even if 40 centimetres of snow  
21 falls it would be cleared before --

22 STEVE NADON: Exactly. So again, we  
23 did do that activity. To be able to test we had  
24 to clear the tracks.

25 We had one really bad winter, that I

1 recall; we had a lot of snow. It took us -- we  
2 couldn't test for several days because we had to  
3 get rid of that initial dump of snow so that you  
4 could then -- once you got the trains out  
5 there -- once the trains are on the track you  
6 can run through as much snow as falls because it  
7 kind of cleans itself.

8           The trains keep the track clear, if  
9 you want. Like, we actually do that nowadays.  
10 If we are expecting a very large, significant  
11 snowfall we'll keep trains running through the  
12 night so we don't have to stop and clear the  
13 tracks. The trains actually clear the tracks.

14           CHRISTINE MAINVILLE: And so in the  
15 winter of 2020, so when you would have been with  
16 RTM, and there were some switch failures, if you  
17 recall, based on I think failures of some of the  
18 safety sensors which -- and you tell me what  
19 your understanding on this issue may have been  
20 if it differed from this, if you recall, but  
21 which may have been activated by snow, the  
22 sensors. Do you have an understanding of this?

23           STEVE NADON: I don't think I  
24 understand your question. So, first of all, the  
25 winter of 2020 -- just trying to think --

1 CHRISTINE MAINVILLE: I guess it could  
2 be the winter before.

3 STEVE NADON: I just want to backtrack  
4 a little bit, and I'll tell you why. So in my  
5 role as the Project Manager or RTM one of the  
6 remediation actions was to correct switch  
7 heaters. So what we did is we undertook a  
8 campaign to replace twelve of the switch heaters  
9 from an electric switch heater to a gas fired  
10 heater. So I'm trying to understand your  
11 timelines.

12 CHRISTINE MAINVILLE: I think actually  
13 this is January 2020 and so you wouldn't have  
14 been with RTM yet.

15 STEVE NADON: That's correct, I was  
16 still with OLRTC. That fall though is when we  
17 replaced the switch heaters and upgraded the  
18 switch heaters as part of the remediation plan,  
19 which I did as part of the RTG -- wearing my RTG  
20 hat that day. So we completed that work in  
21 December of 2020.

22 So the December 2020 and subsequent  
23 January, February, March of 2021, we had the new  
24 and improved switch heaters, if you want.

25 CHRISTINE MAINVILLE: Could you talk

1 about, from your later maintenance role with  
2 RTM, any issues you saw with the MSF as, you  
3 know, creating some issues for the maintenance  
4 teams in terms of the facility itself and what  
5 it was being used for?

6 STEVE NADON: I'm aware of a few  
7 things that Alstom have brought to our  
8 attention.

9 So RTM is responsible for the  
10 facilities, the equipment within the facilities.  
11 When I say "equipment" I mean the train wash  
12 system, the system that delivers sand for the  
13 sanding systems on the train, for the wheel  
14 lathe that turns the wheels and re-true the  
15 wheels, the lifting jacks that lift the train  
16 for maintenance, the rail car movers that move  
17 the trains that don't have power, the ones that  
18 need to be towed, for example. So those are all  
19 equipment that RTM needs to maintain as part of  
20 this facility.

21 So there's been a number of breakdowns  
22 in these equipments (sic), we address them in a  
23 timely fashion. I don't know -- there's been a  
24 lot of complaints about them but the systems are  
25 the systems that were delivered.

1           The other system that I can probably  
2 discuss is the OCS, the power in the LM bays.  
3 There was a long-standing argument between OLRTC  
4 and Alstom that the fuses that protects the  
5 power supplies for these catenary -- for the OSC  
6 in the LM bays, the light maintenance bays, kept  
7 blowing. And they kept saying, Your design is  
8 wrong. And we kept saying, No, your train is  
9 causing this.

10           So the back-and-forth went on for --  
11 well, it still goes on every now and then. But  
12 I think we finally got them to understand that  
13 they were not coming in to the -- in the  
14 facility the way it was intended. They were  
15 coming in too fast or they were -- let me  
16 rephrase that. There was some literature that  
17 said they should have been coming into the LM  
18 bays at 5 kilometres an hour using what we call  
19 "train wash mode". The train would only be  
20 limited to that speed. When you limit a train  
21 to that speed you're also limiting the amount of  
22 current that train can draw.

23           So because of that they were  
24 throttling the train. They were trying to inch  
25 the train forward with the throttle. And what

1 they were doing is as you do that you're  
2 demanding current every time, so they would pop  
3 these fuses. These fuses were long lead, they  
4 were very expensive.

5 So once we sent them a written  
6 procedure, and we posted it and said, Guys, this  
7 is how you have to do this procedure, that  
8 problem dissipated. So that was problem number  
9 one.

10 Then what happened is we had a  
11 campaign where they had a problem with the line  
12 inductors on the trains themselves. They were  
13 getting contaminated with conductive carbon and  
14 salt, and everything was getting into this line  
15 inductor and it was causing shorts within the  
16 housing, the line inductor would short to ground  
17 within the housing.

18 So what happens is when that would  
19 occur inside the LM bays that would then -- that  
20 electric short that occurred sends a blast of  
21 electricity up the pantograph on to the OSC, the  
22 power of the LM bay, and again would trip out  
23 these power supplies of the LM bay.

24 So once Alstom reconfigured or reset  
25 all of that we had less shorts to ground, as we

1 call it, which was backfeeding into the power  
2 supplies, the problems seem to have gone away.

3 CHRISTINE MAINVILLE: Would any of  
4 this have related to the derailments and the  
5 maintenance in the MSF in the late fall of 2020?

6 STEVE NADON: Nothing of what I just  
7 described has anything to do with that. I'm  
8 trying to think what the root cause of the  
9 derailment was in 2020.

10 CHRISTINE MAINVILLE: In the MSF so  
11 not in the --

12 STEVE NADON: I know about it because  
13 I was here, I was just here. It was, I think  
14 you're right, October or November if I recall?

15 CHRISTINE MAINVILLE: Yes.

16 STEVE NADON: I think what we finally  
17 discovered was a lack of lubrication on the  
18 rails. And I may be wrong in drawing that  
19 conclusion, but I know we installed -- so the  
20 trains lubricate the main line. So they use  
21 lubrication on curves to have less friction, to  
22 noise suppression, and whatnot. But the system  
23 that Alstom designed does not operate in the  
24 MSF, it only works on the main line. It's got  
25 some programming that it knows that you're in



1 the yard, for example, and they didn't want to  
2 drop any grease.

3 So what we requested Alstom to do  
4 after that derailment was to start to manually  
5 grease these curves by hand, like literally  
6 slather it on with a paint brush, which  
7 minimized the chance that -- because how this  
8 derailment occurred was the train went around a  
9 very sharp curve, one specific curve in the MSF.  
10 And the wheels rub up against the side of the  
11 rail, but the wheels are rough because they were  
12 just turned on the wheel lathe, so the edge of  
13 the rail is rough. So what you end up doing is  
14 to start to climb the side of the rail because  
15 you have two rough surfaces that have very  
16 little lubrication to keep things fluid.

17 So what we've done since then is we've  
18 installed a yard lubrication system. So we have  
19 a system now that lubricates the rails as trains  
20 go by. It basically pumps -- I won't use the  
21 word "oil" because it's not oil, but a  
22 lubrication, we'll call it. And as the trains  
23 go around the yard that lubrication is  
24 transferred to all the rail systems.

25 CHRISTINE MAINVILLE: And what about

1 the competition for space at the MSF for vehicle  
2 manufacturing and retrofits, and other things  
3 like that? Did that have an impact on  
4 maintenance from the time you were with RTM?

5 STEVE NADON: It's still a juggle. We  
6 do that -- I mean, we literally had a meeting  
7 yesterday on it because Thales is still working  
8 on the final stages of commissioning the yard in  
9 what they call a UTO, unattended train  
10 operations.

11 These trains are designed to drive  
12 themselves, you literally click the mouse and  
13 say, I want train A to go from this point to  
14 this point. You send that command to the train  
15 and it'll do it. It'll set the routes and do  
16 everything it's supposed to. So that feature  
17 does not exist yet, they're still in the  
18 commissioning stages of it.

19 So that's one competing interest. We  
20 do have the production, as you say, the  
21 manufacturing that are still here. They're  
22 still doing assembly work on the trains that  
23 come from Brantford, they're not 100 percent  
24 complete. And then we have the daily routine  
25 maintenance. So these three competing

1 activities are a challenge to schedule, but we  
2 manage to schedule.

3 Right now the one that takes the back  
4 seat is always Thales, they don't like that but  
5 we have to put out service. Service is the  
6 number one goal for us. To make sure we have  
7 the fleet available to get out 15 trains a day.  
8 So until that is achieved you can lose your  
9 window, let's just say. If something gets  
10 bumped it's Thales.

11 CHRISTINE MAINVILLE: Which is why the  
12 yard is not yet automated, which is what you're  
13 referencing, correct?

14 STEVE NADON: This is the excuse they  
15 give us, yes, it's all our fault. Even though  
16 I'm saying, Why wasn't it commissioned before  
17 you delivered everything? We have a difference  
18 of opinion as who's delaying who.

19 CHRISTINE MAINVILLE: Right.

20 Can I ask you, was there any ATO,  
21 automatic train operation, testing during  
22 testing and commissioning?

23 STEVE NADON: Oh yes, absolutely.

24 CHRISTINE MAINVILLE: And would Alstom  
25 have been involved in that?

1                   STEVE NADON: That I can't answer.  
2    Because the way these trains are tested -- let  
3    me think about -- I'm trying to think about  
4    testing commissioning. I'm thinking more of a  
5    new train the way it's done. And all the trains  
6    would have had this activity I'm about to  
7    describe.

8                   So every train that comes here the  
9    first people to touch it is Alstom. Alstom get  
10   first crack at the train. They are using the  
11   train on what we call the test track. Alstom  
12   doesn't have drivers, so the only people that  
13   are allowed to drive the trains on the main line  
14   is -- at this point is OC Transpo. So they,  
15   under Alstom's guidance, take the train out  
16   there and run it at various speeds, all in  
17   manual control. Because Alstom is just  
18   exercising the brakes, the functionality of the  
19   train. Anything that is train-specific Alstom  
20   is doing their validation, and they call that  
21   the Alstom dynamic PICO. So they do that  
22   portion.

23                  Once Alstom signs that off saying  
24    they've done that portion, they'll sign a  
25    certificate saying the train is safe for train

1 testing. It then gets handed to Thales.

2 Thales will then do their portion,  
3 which is called the Thales dynamic PICO. So  
4 Thales will spend -- I can't remember how many  
5 hours, there's four or eight hours of testing, I  
6 can't remember exactly what it was, on the main  
7 line. On a very -- again I call it a section of  
8 the main line. And they will start to integrate  
9 the systems, right?

10 And one of that portion of testing is  
11 ATO that you talk about. They'll turn on all  
12 the computer systems, they'll make sure that the  
13 train communicates through the CBTC, computer  
14 systems. And one of the tests that Thales do is  
15 this ATO test, which means the train can be put  
16 in automated mode, it will run based on the  
17 Thales commands and it will run at whatever  
18 speeds are designed through that control system.

19 CHRISTINE MAINVILLE: Who would  
20 determine who needs to be there in terms of  
21 Alstom being involved or not in any particular  
22 test?

23 STEVE NADON: Well Alstom is -- so  
24 this is all through OLRTC. They still have a  
25 team there today that are still designing that.

1 They witness the test. They're always on board  
2 the test, on the Alstom section and what is  
3 known as the Thales section.

4 Again, from my -- I'll put my RTM hat  
5 on, I don't care. You just give me a signed,  
6 sealed, delivered. You need to send me a bill  
7 of sale and a safety certificate and then that  
8 train becomes ours to be able to get from the  
9 City. All those other activities are done  
10 through OLRTC.

11 CHRISTINE MAINVILLE: But when you  
12 were at OLRTC doing testing and commissioning --

13 STEVE NADON: I wasn't doing the  
14 trains. I'm aware of it but I wasn't doing the  
15 train testing.

16 The same individuals are still there  
17 that were doing it back then. It's still with  
18 Dr. Sharon Oakley and Joseph Marconi. Those  
19 were the people involved with the rolling stock.

20 CHRISTINE MAINVILLE: Including for  
21 testing and commissioning?

22 STEVE NADON: Correct.

23 CHRISTINE MAINVILLE: Can you talk  
24 about the interfacing between the various  
25 people -- once you're at RTM, the various

1 entities that need to interface, OC Transpo as  
2 the operator, Alstom of course, and then also I  
3 expect in some respects Thales or OLRTC? And  
4 how that works? What arrangements there are in  
5 terms of how these various people interface.

6 STEVE NADON: I'll give you examples,  
7 I guess, of -- let's start with regular  
8 occurrences.

9 So OC Transpo, RTM and Alstom meet on  
10 a daily basis at various forums. Whether it's  
11 daily maintenance, I'm trying to think what it's  
12 called. We have it at 9:30 every day. The  
13 daily maintenance meeting.

14 There's also daily operating meetings  
15 where we review yesterday's performance so we  
16 can attribute any -- what they call "lost  
17 kilometres". So if a train didn't do the number  
18 of round trips it should have you'll be assessed  
19 a penalty.

20 So they look at those lost kilometres  
21 and determine whether it was a train problem,  
22 operator problem or something else. If it's a  
23 train problem those are what they call  
24 project-co availability hits, if you want. So  
25 that daily operating does that analysis.

1                   Did an operator do something  
2 incorrectly? Did they stay at a station too  
3 long? Left their doors open because they had to  
4 tend to somebody? Was there a passenger in  
5 distress? Those are not project-co. They are  
6 non-project-co costs.

7                   So there's that review of the data and  
8 assigning where those lost kilometers, if there  
9 are any, get attributed to which party. So  
10 that's that one meeting.

11                   The daily maintenance meeting to  
12 discuss all of the maintenance activities that  
13 occurred. So once again that's those three  
14 parties, RTM, Alstom and the City.

15                   Since the derailments we now have a  
16 vehicle report and action item meeting with the  
17 City. This is a senior level meeting, if you  
18 want. So myself, Mario and senior people at the  
19 City. So we discuss, again, yesterday's  
20 performance. What the issues were? Were there  
21 any? Things have gotten better -- how many  
22 trains did we have in operation today? So it's  
23 just a half hour snapshot of a daily overview.

24                   Throughout the week there's various  
25 other meetings where we discuss the penalties,



1 as we talked about. There's a weekly dispute  
2 resolution meeting where we try to say, you  
3 know, when the City has reassessed these alarms,  
4 as I mentioned earlier, we debate our case, they  
5 listen to their case. If we can't resolve it it  
6 gets escalated to the next monthly committee  
7 where we'll discuss it again. That's the daily,  
8 daily stuff we do as an organization.

9 Not considering all of the -- I don't  
10 know how many emails a day we share in all those  
11 directions. Myself to Alstom, myself to OC  
12 Transpo and vice versa. There's queries,  
13 questions, letters. Letters, my God, how many  
14 letters do we get back-and-forth demanding  
15 information, looking for reports.

16 So that's that side of the business.  
17 So that's pretty much those three.

18 Now I'll throw you into the Thales and  
19 OLRT side.

20 CHRISTINE MAINVILLE: And just before,  
21 you mentioned "Mario", is that Mario Guerra.

22 STEVE NADON: Yes, my manager, my CEO.

23 CHRISTINE MAINVILLE: And those  
24 meetings with the meeting those would not  
25 include Alstom, correct?

1                   STEVE NADON: No, Alstom is there as  
2 well, yes.

3                   CHRISTINE MAINVILLE: Who is there on  
4 behalf of Alstom?

5                   STEVE NADON: Senior management right  
6 down to I want to say supervisors to managers.  
7 So we've had Jeff Gaffney, we've had Peter  
8 Keighron, we've had Josée Ouellet, who is senior  
9 VP, I think, within Alstom. At various times  
10 various people pop up. They had their quality  
11 control manager, Jean Francois, his last name  
12 escapes me at the moment, he's attends on a  
13 regular basis. It's a well-attended meeting.

14                   CHRISTINE MAINVILLE: Okay.

15                   STEVE NADON: On the other side now,  
16 when you talk about how does Thales, or others,  
17 get involved? So this we do through our  
18 maintenance planning. So if you want to do any  
19 work, or if you want to do any testing on our  
20 alignment you need to come up with your test  
21 plan two weeks in advance.

22                   So those test plans are submitted to  
23 myself and my team for review, and we then  
24 present them to the City. And when I talk about  
25 Thales and OLRTC, it also applies to ourselves.

1 Because we have to present these test plans and  
2 these requests to the City so they can validate  
3 that we're allowed to do the work.

4           Such as, in my case, for example, I  
5 might have a work order that says I have to  
6 repair a broken floor tile in one of the  
7 stations. I have to make a request to the City,  
8 Mr. City, may I do that job on September 10th  
9 at -- between the hours of this point and this  
10 point?

11           And they will back with a slew of  
12 questions. Well, is it in front of an  
13 escalator? Is it in front of an elevator? How  
14 are you going to delineate your work zone? We  
15 go back-and-forth. This is just ridiculously  
16 monotonous work.

17           CHRISTINE MAINVILLE: Why is there a  
18 need for City approval?

19           STEVE NADON: Very good question.  
20 Maybe if you're deposing the City you can ask  
21 that and give me that answer. It's ridiculous.  
22 They handcuff us at every turn trying to do the  
23 job they hired us to do. They second-guess  
24 everything we try and do and it just draws the  
25 process out and it makes -- they want two weeks'

1 notice for that process to take effect.

2 And I described, you know, a very  
3 small one. Some of them are larger jobs which  
4 do take planning and co-ordination, but at some  
5 point it gets ridiculous. But, anyway, there is  
6 a process in place, that's really all I wanted  
7 to tell you.

8 If Thales follows that process, they  
9 make the request to us, they say they want to do  
10 the specific test in the yard on a weekend, as  
11 an example. So then we have to solicit input  
12 from Alstom, solicit input from our own control  
13 centre to make sure that there's nothing else  
14 going on, solicit input from two stages of  
15 Alstom, there's Alstom Vehicle Maintenance and  
16 Alstom Infrastructure Maintenance, because they  
17 don't talk amongst themselves very well. So you  
18 to probe and make sure they're not doing OCS  
19 inspections, as an example, the same day Thales  
20 want to do vehicle testing in a certain section  
21 of the MSF.

22 CHRISTINE MAINVILLE: Are there too  
23 many interfaces in this project, at least from  
24 your RTM perspective?

25 STEVE NADON: Absolutely. Again, I'm

1 the maintainer, I should have full autonomy to  
2 maintain your network.

3 Tell me, Maintain it. Give me 15  
4 trains a day. I don't care how you do it just  
5 make sure they everything is safe.

6 We can do that. We can report on it.  
7 We can give them statistics. But at every turn  
8 we have to justify everything we want to do.

9 Even within their own organizations  
10 they trip over themselves. I'll get approval  
11 from Matt Peters, for example, to use a scissor  
12 lift on the platform to change light bulbs in  
13 service. And again, we've gone through the plan  
14 where we say, We won't park the scissor lift in  
15 front of an elevator in case somebody needs to  
16 use it. We'll have flag people watching the  
17 elevator.

18 And then all of a sudden my people  
19 will start the work, because they were told they  
20 can, and we'll get a -- we'll get somebody on  
21 the loudspeaker saying, Get off that lift.  
22 You're not supposed to be in the station during  
23 the day. You're suppose to do that in  
24 engineering hours only. So this is the control  
25 centre watching on video, seeing that we're

1 doing maintenance and second guessing.

2 They don't seem to have their own  
3 priorities aligned in-house where they're  
4 talking to each other and establish that we are  
5 allowed to do certain things and not allowed in  
6 certain times.

7 We try to limit the amount of work we  
8 do during the peak periods. They consider their  
9 peak 6:00 a.m. to 9:00 a.m., and 2:30 p.m. to  
10 6:00 p.m. So there's the two -- the morning  
11 peak and the afternoon peak. We limit our  
12 activity, but after that we direct traffic. We  
13 can let people know. We put up cones and tell  
14 you where we're working.

15 CHRISTINE MAINVILLE: And how did RTM  
16 manage change control?

17 STEVE NADON: We have a procedure,  
18 a process. There's a change management document  
19 that's out there that describes the process. So  
20 in this particular case I'll use a vehicle  
21 example.

22 Alstom will make a request to the  
23 Change Control Board, I'm the Chair of that  
24 Board. We'll meet to discuss the changes they  
25 want to put forward. We'll present that to Matt

1 Peters on the City side. He'll sometimes  
2 approve on the spot -- actually he's never done  
3 that, let me take that back. He usually takes  
4 it away to an audience, I believe, of his  
5 counterparts, I don't know who they are, and  
6 either approves the request, denies the question  
7 or requests more information, but there's a lot  
8 of back-and-forth on that aspect.

9           And then typically if a change is  
10 granted on a vehicle, a software change for, I  
11 don't know, whatever, something that they want  
12 to modify. If it's agreed there's a test phase  
13 and then there's a deployment phase.

14           So there's a -- part of your test plan  
15 has to say, I'll make the change on this  
16 particular vehicle. We'll run it in engineering  
17 hours to see that there's no down side to the  
18 change, there's no backwards incompatibility,  
19 for example. So that's test number one.

20           And then you to submit a report to the  
21 City. That could just be an email saying, The  
22 test passed, I want to go to the next level of  
23 testing.

24           The next level of test was typically  
25 run the train in -- I think it was late evening,

1 like 8:00 p.m., until closing for two nights and  
2 again report back to the City. Did you see any  
3 anomalies? No. Great.

4 Then you're allowed to move to the  
5 next stage. The next stage is you run one train  
6 for 12 hours on a weekend, and if that passes  
7 then you're allowed to run two trains on a  
8 weekend. And if that passes you can then say,  
9 Here's my test report. You have to say that you  
10 passed all these steps. And then you re-apply  
11 now to say, We believe -- we've met all the  
12 criteria. This is a valid change. We would  
13 like to request deployment against the fleet.

14 The City take that, they look at the  
15 report, they question it. They say, No, you  
16 said you were going to run 12 hours. That train  
17 only ran 11 hours and 40 minutes. We reject  
18 your test. Start again. It's that silly.  
19 There's very little wiggle room.

20 We do have some times where we've  
21 negotiated some changes and they say, Okay,  
22 we'll bow on this one because it's not something  
23 critical that they wanted exactly 12 hours of  
24 testing. Sometimes we have 18 hours of testing.  
25 It just depends on how many trains are out there



1 and what's going on on that Saturday or Sunday.

2 CHRISTINE MAINVILLE: Have there been  
3 any issues with change management that may have  
4 had an impact on the performance of the system?

5 STEVE NADON: I can only think of one  
6 that ever became an issue. Gee, what was it?  
7 There's one that we had to roll back. I don't  
8 even know if it went across the entire fleet.

9 During one of the Thales retests,  
10 we'll call it, of a vehicle that particular  
11 software change that was made in an iteration,  
12 I'm going to say, a month or two prior one of  
13 the systems didn't behave as expected. And  
14 after digging they realized there was an error  
15 in the code so we had to roll that back. And I  
16 had to stop the release of that version of  
17 software from being deployed on other trains,  
18 and roll it back on the trains they had already  
19 deployed it on. That's the only one I can  
20 remember, and that was maybe six months ago.

21 CHRISTINE MAINVILLE: First of all,  
22 you knew that OC Transpo -- or did you have an  
23 awareness that OC Transpo was not a mature  
24 operator -- never operated trains, correct?

25 STEVE NADON: They had operated

1 trains. I mean, they have the O-Line, the  
2 O-Train, but I would still not consider them a  
3 mature train transit system operator.

4 CHRISTINE MAINVILLE: Were there --  
5 did that manifest itself in any way or did  
6 you -- what did you -- how do you perceive OC  
7 Transpo's level of experience to be and  
8 preparedness once you arrived?

9 STEVE NADON: Again, we had a lot of  
10 internal discussion, my colleagues, my managers,  
11 for example. During the construction phase we  
12 kept saying, it's unfortunate some of the  
13 questions and queries we were getting, because  
14 you could tell it was from a non-mature transit  
15 organization. When I say "transit" I'm going to  
16 use train transit because they are a bus  
17 transit.

18 We always said, this project would  
19 have been so much easier if it was an extension  
20 of an existing line. If it would have been  
21 building, I don't know, another section of the  
22 subway system in Toronto, or Montreal, or  
23 Vancouver that already existed. Because the  
24 parties would have known what to expect, how  
25 things rolling out. We didn't feel we had that

1 understanding from OC Transpo.

2 But I have to be careful when I say  
3 "OC Transpo", because there really were two  
4 entities in the City. There was O-Train  
5 constructors who were, I think, the prime, and  
6 OC Transpo is the operator of the system. In my  
7 experience even those two entities didn't agree,  
8 didn't get along.

9 It was very odd, all of the testing  
10 that I explained to you earlier, the testing and  
11 commissioning, was all done with O-Train  
12 constructor as a witness, not OC Transpo. OC  
13 Transpo was just the train driver. They didn't  
14 get involved until later stages when we started  
15 to look at operational scenarios. O-Train  
16 constructors were the ones that were vetting the  
17 system.

18 CHRISTINE MAINVILLE: Are they not --

19 STEVE NADON: The same City?

20 CHRISTINE MAINVILLE: Well, they're  
21 the city but is that the rail implementation  
22 office that became --

23 STEVE NADON: Yeah, exactly. They did  
24 change their name. O-Train construction is now  
25 used RCP, you are correct. That is what they

1 used to be called, OCT -- they used to be --

2 CHRISTINE MAINVILLE: RIO.

3 STEVE NADON: Yeah. OTC and OCT, I  
4 used to get -- it was O-Train construction and  
5 OC Transpo. Now I think they were probably  
6 getting themselves confused and that's why OCT  
7 is now called RCP, rail construction project.

8 CHRISTINE MAINVILLE: Now it's RCP.

9 STEVE NADON: Yeah, it's confusing.

10 CHRISTINE MAINVILLE: In terms of the  
11 various issue you mentioned with, for instance,  
12 Alstom, Alstom's lack of preparedness or  
13 resourcing, issues of that nature relating to  
14 maintenance, would you -- what role do you see  
15 that having had, or potentially had in respect  
16 of the various breakdowns and derailments that  
17 the system encountered?

18 STEVE NADON: On the derailment side  
19 of things I don't know that there's a link  
20 there.

21 Again, we're still looking for the  
22 root cause analysis on the August derailment.  
23 Until we know that I don't think we're sure if  
24 it's going be a component problem or a -- I  
25 don't know. We're still waiting on -- I mean,

1 every week we're going to a meeting on that one.  
2 I'm still waiting on a final determination.

3 On the second derailment, as a direct  
4 result of staffing problems, I guess, or  
5 improper torquing procedures is what it ended up  
6 being, they hadn't torqued the bolts correctly.  
7 So would you put that as a staffing problem? Or  
8 a training problem? Or a -- I'm not sure. I  
9 don't know if it as an oversight problem if they  
10 didn't have the proper QA process in place. But  
11 that's where that essentially fell through the  
12 cracks.

13 CHRISTINE MAINVILLE: And do you have  
14 any understanding of -- in terms of operations  
15 whether -- because I understand the train ran  
16 for quite a while for the second derailment  
17 after it derailed?

18 STEVE NADON: Correct.

19 CHRISTINE MAINVILLE: Do you have any  
20 information about, you know, the extent to which  
21 the operator of the train should have been able  
22 to stop the train more quickly? Or make  
23 observations about certain -- about a failure?

24 STEVE NADON: I'll take you through  
25 that entire day, I guess. So I was actually a

1 passenger on that train when it derailed, or let  
2 me rephrase that.

3 I was on that train prior to its  
4 derailment. I got off at that station where it  
5 had derailed. I had my family on there, my  
6 grandchildren just going for a joy ride. We  
7 were taking the train and it was the first time  
8 on the train, they were excited. We took it  
9 from Blair at -- between St-Laurent and Tremblay  
10 I had heard a clinging sound beneath me and I  
11 thought a cable had come loose, or something was  
12 dragging. So I told my wife, We're going to get  
13 off at the next station because I don't think  
14 this train is going to make it to our final  
15 destination, it's going to get pulled out of  
16 service. We'll just take the next one.

17 So we got out at the train station at  
18 Tremblay, and I was on my phone calling the  
19 control centre to say, Take this train out of  
20 service, when the train departed.

21 And as it departed it kicked ballast  
22 up all over the platform. Immediately I knew it  
23 had been derailed. It was no longer -- all  
24 wheels were not on rail. There was at least one  
25 set of wheels not on the rail because it was

1 kicking all this debris up.

2 So that is that portion of it. So I  
3 was on the phone trying to get that train to  
4 stop.

5 I don't know why -- I don't know what  
6 an operator was feeling. Because we heard  
7 interviews from that operator saying he felt  
8 nothing. He didn't notice that there was any  
9 strange behaviour in his train.

10 One thing, the logs or the downloads  
11 that Alstom have obtained is, I think I  
12 mentioned earlier when we talked about the MS,  
13 there's a sanding system on board the trains.  
14 Trains use sand for traction.

15 If you're not getting -- because  
16 you're steel on steel, and if you have moisture  
17 on the track, or if you have ice build-up the  
18 train will disperse sand so that the wheels can  
19 grip to give you some traction to get mobilized.

20 And Alstom reported that during this  
21 incident after the derailment there was a light  
22 flashing at the operator's control -- they call  
23 it the DDU, the driver display unit, indicating  
24 sand being dropped consistently. And they said  
25 that should have registered to the operator that

1 there was a problem here. You don't just drop  
2 that sand on -- and, again, it's like every  
3 second, on a routine basis. And the reason it  
4 was happening is that that wheel that was off  
5 was spinning freely, there was no traction  
6 there. So that's why that indicator was there.

7 But whether the operator didn't see an  
8 indicator or ignored it, I can't speak that. We  
9 were not allowed to speak to the operator.

10 That was, I think, one sign that he  
11 should have stopped.

12 He said he didn't feel anything. I  
13 could probably believe that because he was in a  
14 lead car not the car that was actually derailed.  
15 So maybe he doesn't feel any motion in the back  
16 end of the car, which is quite a ways back.  
17 It's almost A 100 metres away from where he is.  
18 I'll give him the benefit of the doubt there.

19 But the other interesting fact is,  
20 there were other passengers on the train that I  
21 was on, they didn't feel anything either. I  
22 kind of felt something because I, I don't know,  
23 I kind of knew what it normally should sound  
24 like. Maybe they were either immersed in what  
25 they were doing, but they never felt or knew



1 anything.

2 I'm assuming if the person had been  
3 close enough and looking out the back window --  
4 oh you can't really see out the back window.  
5 They would have saw the cloud of dust behind  
6 them that I saw, but none of that was reported.

7 So what stopped the train eventually  
8 is the bogey was dislodged in such a way that it  
9 was hanging right of the vehicle as it made that  
10 climb up the hill and starting to make that  
11 curve.

12 So the bogey and the traction motor  
13 that was outside the vehicle envelope, as we  
14 call it, struck the signaling system. And when  
15 the signaling system, this is part of the safety  
16 teach of the Thales system. If Thales doesn't  
17 see a proper signal it EB's, emergency brakes  
18 the train. And that's what happened in this  
19 case. It said, I don't recognize if my switch  
20 is in the correct location or the not correct  
21 location. Because the control system got hit by  
22 the bogey, or the gearbox, I'm not sure which  
23 one hit exactly, but whatever dislodged that  
24 function is what caused the system to react and  
25 emergency brake that train.

1 CHRISTINE MAINVILLE: You mentioned  
2 not being able to speak to the operator of the  
3 train. Is there, from your perspective, your  
4 role at RTM, a lack of -- are there obstacles to  
5 information sharing that impact your ability, or  
6 the maintainer's ability to perform their work?

7 STEVE NADON: Oh, absolutely.  
8 Absolutely.

9 We -- the CCTV system, for example, is  
10 vital, I mean, it gives you a lot of  
11 information. We are not allowed to -- we are  
12 allowed to use it in the course of maintaining  
13 the system. We're not allowed to use it for any  
14 investigational purposes. We're not allowed to,  
15 you know, for example, if the City reports an  
16 intrusion in a specific spot and we want to say,  
17 We want to see who it was. The City says, You  
18 can't do that. That's their job to patrol the  
19 people, we'll say.

20 We just want to see what they did.  
21 Did they force something open? Did they jam a  
22 screwdriver into a door? They won't allow us to  
23 do that. We have to make written requests for  
24 any viewing of CCTV footage, and even then it's  
25 not always granted.

1           We've had occasions where they say --  
2 I'm not even sure if it was on the derailment  
3 specifically, it might have been, where we  
4 wanted to see the footage from the vehicle.  
5 Because there's on-board cameras on the vehicles  
6 and we wanted to see the front view or the rear  
7 view. I don't think it was derailment but there  
8 was another incident we want to look at.

9           And so we requested it in writing and  
10 the City said, Oh, we looked at it. There's  
11 nothing there for you to see so we're not going  
12 to provide it.

13           So they're making the call without  
14 having us and our experts -- don't forget,  
15 there's expertise here that understand trains  
16 and maintenance and networks. Maybe the City  
17 doesn't see something but we might. We've often  
18 lost that challenge.

19           When it comes to their operators we  
20 are not allowed to speak to any of their  
21 operators. We've never been able to. They'll  
22 get transcripts for us. Radio transcripts we  
23 can request.

24           In this case of that particular  
25 individual that was driving the train that

1 derailment day we were given his witness  
2 statement that they asked the questions, but we  
3 weren't allowed to ask questions.

4 CHRISTINE MAINVILLE: So what reviews  
5 were undertaken following the derailments?

6 STEVE NADON: I don't understand.

7 CHRISTINE MAINVILLE: Well, in terms  
8 of, I believe, for instance, both on RTG or  
9 RTM's, but also the City side I understand there  
10 would have been some reviews or investigative  
11 work done?

12 STEVE NADON: On the derailments  
13 themselves or on the procedures after the fact?

14 CHRISTINE MAINVILLE: Well both.

15 STEVE NADON: Well, again, there was  
16 -- obviously it was complete chaos. The second  
17 derailment, in their eyes, in a short period of  
18 time. Ground the fleet. Start the inquisition.  
19 Look for everything. So there was ongoing  
20 scrutiny.

21 There was debate over what happened,  
22 even after we knew, within, God, I want to say  
23 less than a week, in a few days we knew what the  
24 root cause was. It was evident to us what had  
25 happened. Somebody had not tightened the bolts

1 on that specific gear box.

2 After making that hypothesis, and then  
3 looking into the records and finding that the  
4 torque records validated that it wasn't done.  
5 It was clear to us what happened.

6 But then the City continued on a  
7 campaign of, no, you need to produce a complete  
8 return to service plan, and it had to include  
9 volumes and volumes of information. And they  
10 wanted org structures. They wanted to know how  
11 your organization is going to be restructured so  
12 it doesn't happen again.

13 They brought independent reviewers in.  
14 They brought in TRA as a subcontractor to then  
15 scrutinize everything we're doing, and that's  
16 still going on as we speak.

17 CHRISTINE MAINVILLE: And do you know  
18 whether anyone was involved before TRA, on  
19 behalf of the City?

20 STEVE NADON: Yes. The City had  
21 originally -- I guess it was the City Manager,  
22 Steve Kanellakos, who announced that the Transit  
23 Commission would bring in a third-party  
24 independent reviewer.

25 So originally they selected STV, very

1 briefly, I'm going to say for a day, maybe two,  
2 and then realized that they were not truly  
3 independent because they had already worked on  
4 this project as a City consultant before.

5 So shortly thereafter, literally two  
6 days into that, we were told, no, STC would no  
7 longer be the independent. The City was looking  
8 for a new one.

9 I don't know if they had one  
10 immediately, but shortly thereafter TRA was  
11 appointed as the new, independent third-party  
12 reviewer from the City side.

13 CHRISTINE MAINVILLE: And have you  
14 been made privy, or you or others at RTM or RTG,  
15 to any of TRA's findings, reports, anything like  
16 that?

17 STEVE NADON: I don't know that I've  
18 seen anything official. I mean, there's been  
19 some -- I saw the report that they gave to  
20 Transit Commission. Because I think there was a  
21 transit update given a month or two after the  
22 derailment. I saw that interview.

23 Reportwise I don't know that they've  
24 ever produced a recommendation is, I guess, what  
25 I'll be looking for.

1           They seem to only be looking -- they  
2 seem to only be reviewing our data and giving us  
3 feedback on it, not necessarily producing  
4 something of theirs that dictates anything. If  
5 that makes any sense.

6           We don't seem to be getting a lot of  
7 recommendations, positive feedback. It's more,  
8 you know, show me how you've done this. Thank  
9 you very much. Where can I find this  
10 information? When did you do this particular  
11 activity? So there's been a lot of that, a lot  
12 of interrogation, but I haven't seen much on the  
13 positive recommendations, or you should do this  
14 instead, or do it this way.

15           CHRISTINE MAINVILLE: So were any  
16 changes put in place following the derailments?  
17 Were any changes seemed to be needed or --  
18 whether for you or Alstom?

19           STEVE NADON: So the short answer to  
20 that is, yes. There's been a lot of changes  
21 that have been put in place.

22           Alstom have changed a lot of their --  
23 I won't say record keeping, the quality control  
24 is maybe the right word. They have enhanced  
25 some quality control, in situ. They have

1 rewritten a lot of their procedures. A lot of  
2 peer reviewing and then more spot checking.  
3 Changed a bit of their management structure I  
4 believe, as did RTM.

5 We were already leaning towards more  
6 of an oversight role with Alstom. So we kind of  
7 restructured a little bit here as well, and that  
8 was all presented in the return-to-service plan  
9 that the City requested.

10 CHRISTINE MAINVILLE: So you're saying  
11 even though RTM was heading in the direction of  
12 increasing oversight over Alstom it was  
13 amplified further?

14 STEVE NADON: It was now formalized.  
15 We put it in the document and we showed the  
16 actual roles and responsibilities.

17 CHRISTINE MAINVILLE: Do you know  
18 whether any changes were made to operations on  
19 the OC Transpo side?

20 STEVE NADON: I don't.

21 CHRISTINE MAINVILLE: Do you have any  
22 view as to the potential root causes of what led  
23 to a number -- not just the derailments but a  
24 number of the issues that the system has  
25 encountered, just from a very kind of high



1 level? Things that might have contributed to  
2 why the system as experienced a significant  
3 number of issues?

4 STEVE NADON: I mean, I think it's  
5 very well documented in the remediation plan,  
6 that was why it was brought in in that short  
7 period of time for April to September, for  
8 example.

9 I was working on the remediation plan  
10 prior to that, but we all kind of had a  
11 come-to-Jesus moment, if you want, in January  
12 when passengers got stranded on New Year's Eve,  
13 I think it was. A lot of us got called in on  
14 New Year's Day to have a sit-down with RTG and  
15 start formulating, what the heck is going on?  
16 Why were we having these problems?

17 And as I think I mentioned earlier  
18 with that line inductor problem where the  
19 shorting on the top on the roof car was a  
20 significant finding.

21 So all of those investigations and  
22 reviews were -- are well documented in the  
23 remediation plan, which we've -- are either have  
24 taken care of or at 90 percent completion.

25 Some of it was literally just

1 documentation and processes, but the  
2 functionality, the verification of things, again  
3 the line inductors have all been replaced.  
4 There is a complete OCS review. We've reviewed  
5 the entire catenary system and made sure it was  
6 all realigned and verified.

7           So I say that there's 14 key items in  
8 there. There's a Thales software update because  
9 there was a section in the Thales software which  
10 would cause emergency braking in certain  
11 instances.

12           Well, any time you emergency brake a  
13 vehicle you end up causing these flat spots.  
14 The wheels become -- they have a flat area on  
15 them, so the trains have to come in and get  
16 machined so you take that train out of service.

17           So all of these improvements that were  
18 done over the last, I would say, year, year and  
19 a half, whatever that timeframe is, have all  
20 made the fleet of Alstom vehicles more resilient  
21 to where they probably should have been from day  
22 one.

23           CHRISTINE MAINVILLE: So everything on  
24 that list has been addressed?

25           STEVE NADON: Yes, it has.

1 CHRISTINE MAINVILLE: And to be clear,  
2 this is the one in 2020 prior to the derailment?

3 STEVE NADON: Yes, it is.

4 CHRISTINE MAINVILLE: So who  
5 contributed to that plan in terms of entities?  
6 RTM had input, RTG, OLRTC, or other?

7 STEVE NADON: All entities. Alstom,  
8 RTG, RTG managed it, we'll call it, RTM, OLRTC,  
9 Thales, Alstom, so all the subcontractors. It  
10 just depended on what system it was going to  
11 affect.

12 Consultants were brought in. JBA was  
13 hired, I believe by RTG, or RTM, I'm not sure  
14 which organization, but a consultant firm from  
15 the U.K. were brought in to oversee some of the  
16 repairs, or some of the modifications Alstom  
17 were proposing.

18 They instituted some visual management  
19 tools to be able to track things better. So  
20 there was a lot of work put into that  
21 remediation plan.

22 CHRISTINE MAINVILLE: Do you have any  
23 sense of why the items that were addressed there  
24 weren't resolved earlier prior to RSA?

25 STEVE NADON: Because they didn't

1 develop prior to RSA, they weren't noticeable.  
2 They didn't materialize themselves.

3 CHRISTINE MAINVILLE: One question I  
4 forgot to ask, how, when you arrived at RTM,  
5 were the preventative maintenance plans? Was  
6 there any ability to do preventative  
7 maintenance?

8 STEVE NADON: Oh yeah, they existed.  
9 The plans had already existed. There was a  
10 schedule of these preventative maintenance  
11 plans. Were they being executed? What we're  
12 finding is some were, some were not. Alstom  
13 chose to do the ones they felt were necessary as  
14 opposed to following the OEM manuals, as I  
15 stated earlier.

16 CHRISTINE MAINVILLE: Was there, as  
17 time passed, challenges to doing preventative  
18 maintenance based on the other pressures on the  
19 systems that you mentioned? You know, work  
20 order backlogs, and things like that?

21 STEVE NADON: They were late. A lot  
22 of times they were late. I think if you're  
23 looking at it in that regard, work orders may  
24 have gotten in the way of -- let's say a  
25 specific -- let's call it a six-month

1 preventative maintenance by end of May, you  
2 know, based on the schedule. And maybe Alstom  
3 didn't get to it until two weeks late, three  
4 weeks late. They would say, Our engineers  
5 evaluated it and it's not -- it wasn't critical,  
6 or it didn't have an impact if you were --  
7 because, again, the preventative maintenance  
8 always had a tolerance in it, and I'd have to go  
9 back into the records to see what it is.

10 But, as an example, a one month  
11 preventative maintenance might allow you a  
12 7-day, plus or minus, buffer. A 6-month might  
13 allow you a 30-day buffer. So sometimes they  
14 were okay, they were within their buffer and  
15 sometimes they were outside that window.

16 So we challenged them on that. Why  
17 were you late? We just didn't have enough time.  
18 We had a concession. They called this  
19 concession review from their engineering group  
20 within Alstom that said they allowed them to  
21 extend the interval of the preventative  
22 maintenance schedule.

23 CHRISTINE MAINVILLE: Can we go off  
24 the record.

25 -- OFF-THE-RECORD DISCUSSION --

1                   CHRISTINE MAINVILLE: I just wanted to  
2 ask you about testing. In terms of full  
3 integration testing, when the trains are  
4 running, is it the case that only some trains --  
5 some vehicles were run? I know you weren't  
6 directly involved in the vehicle testing, but  
7 from your -- you were involved in integration  
8 testing with Thales' system and that piece of  
9 it. Were only some of the trains run as opposed  
10 to the entire fleet?

11                   STEVE NADON: That's safe to say, yes.  
12 You wouldn't test every train in every scenario,  
13 because what they're doing is you're doing  
14 qualification tests. You're not doing -- you're  
15 validating a network.

16                   So, for example, one of the  
17 integration tests would have been 10 or 15  
18 trains on a line, I can't remember what it was.  
19 So you have a very large volume of tests -- of  
20 trains there.

21                   But would I say, Okay, we have 30  
22 trains in our fleet. Sorry, 30 cars, there's  
23 34, but those other four trains, do we run  
24 another scenario where we test one more time and  
25 we swap a few trains out? The answer is, no,

1 you wouldn't do that. That's not how you would  
2 design your tests.

3 Because the tests that you're  
4 executing isn't a train-specific exercise, it's  
5 a -- it's how does the system behave with that  
6 volume of vehicles on it?

7 CHRISTINE MAINVILLE: And you did have  
8 the volume that you required in order to  
9 simulate a real experience?

10 STEVE NADON: Yes, I believe so. I'd  
11 have to go back into every one of my tests in  
12 case there was one that required 15 and I had  
13 14, I don't remember.

14 But, again, that would have been  
15 flagged as a deficiency. Let's say we did do  
16 that, right? The test required 15, I only had  
17 14 because Alstom hadn't manufactured enough  
18 yet.

19 We would have run the test anyway and  
20 had the City approve that as a waiver, that's  
21 one option. Or a deviation where we say, we as  
22 OLRTC ran this test anyway with 14 trains, and  
23 wrote on the test results that it was a  
24 conditional pass, or a pass with a defect, and  
25 that defect gets recorded on the minor

1 deficiency list. And the minor deficiency list  
2 is what gets put into the record at substantial  
3 completion.

4 But at some point that defect needs to  
5 get closed off. So whether that got done at  
6 trial running, or whether that got done at -- I  
7 don't know, first week of revenue service. At  
8 some point that deficiency test, or that  
9 specific caveat would have got revalidated  
10 somewhere, approved, signed off and closed.

11 CHRISTINE MAINVILLE: I just want to  
12 make sure that there's nothing more you wanted  
13 to say that I may not have asked that you think  
14 we should know?

15 STEVE NADON: No. I think I've  
16 answered more than I thought I was going to  
17 answer today.

18 CHRISTINE MAINVILLE: Thank you very  
19 much everybody.

20 --- Concluded at 3:48 p.m.

21  
22  
23  
24  
25



1 REPORTER'S CERTIFICATE

2  
3 I, HELEN MARTINEAU, CSR, Certified  
4 Shorthand Reporter, certify;

5 That the foregoing proceedings were  
6 taken before me at the time and date therein set  
7 forth;

8 That the statements of the presenters  
9 and all comments made at the time of the meeting  
10 were recorded stenographically by me;

11 That the foregoing is a certified  
12 transcript of my shorthand notes so taken.

13  
14 Dated this 21st day of April, 2022.

15  
16   
17

18 PER: HELEN MARTINEAU  
19 CERTIFIED SHORTHAND REPORTER  
20  
21  
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24  
25

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