

**BRITISH COLUMBIA UTILITIES COMMISSION**

**IN THE MATTER OF THE UTILITIES COMMISSION ACT  
R.S.B.C. 1996, CHAPTER 473**

**And**

**Creative Energy Vancouver Platforms Inc.  
Application for Certificate of Public Convenience and  
Necessity for the Expo-Beatty Plants and Reorganization -  
Project Number 1598962**

**Vancouver, B.C.  
August 2<sup>nd</sup>, 2018**

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**WORKSHOP**

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## **VANCOUVER, B.C.**

August 2<sup>nd</sup>, 2018

(PROCEEDINGS COMMENCED AT 1:30 P.M.)

4 THE CHAIRPERSON: Please be seated.

Good afternoon. My name is Dennis Cote and  
I've been asked to chair the panel for the Creative  
Energy Platforms Inc., or otherwise known as Creative  
Energy Application for certificate of public  
convenience and necessity for the Expo and Beatty  
plant project and approvals related to reorganization.

With me today are Commissioners Doug Enns  
on my right, and Miriam Kresivo on my left.

On July 13<sup>th</sup>, 2018 by order G-128-18, the BCUC issued a regulatory timetable which outlined the timing and location of this workshop. By letter of July 20, 2018, the BCUC provided guidance to Creative Energy and participants with respect to this workshop. Points in this letter include the following: The purpose of the workshop which is to provide Creative Energy an opportunity to present the material contained within its application that was filed on June 29<sup>th</sup>, 2018. And the objective of this workshop which is to assist participants in understanding the contents of the application and thereby facilitating the review process.

Creative Energy was also asked to address a

list of topics within this workshop. These include a discussion of corporate reorganization steps, steps undertaken to perform an evaluation on the surplus land and associated property rights inclusive of airspace parcels, long-term plans for the steam system, project lists and impact on ratepayers, project timetable and milestones, alternatives to the proposed project, additional cost to Creative Energy for future capacity increase and project drivers and net present value in revenue requirement calculations.

In addition the letter asked participants to note the following: That Creative Energy will be conducting the presentation, or the workshop, and as is evidenced, there will be a panel that will be in attendance. The workshop will be transcribed and the material presented within this workshop will be entered into evidence and accordingly can be relied upon by the participants. And finally, questions will be permitted.

**Proceeding Time 1:32 p.m. T2**

After my opening remarks have been completed and parties have introduced themselves, I'll be turning the workshop over to Creative Energy to lead us through this presentation. I expect that Creative Energy will allow clarifying questions during their presentation, and at the end there will be an

1 opportunity for questions as well.

2                   Please note that the panel members may ask  
3                   questions of Creative Energy.

The workshop itself is expected to wrap up around 4:30, and we expect to have a break, but leave the timing of this to Creative Energy so as to avoid interrupting the flow of their planned presentation.

8 During the workshop we request that you state your  
9 name prior to speaking so as to facilitate the  
10 transcription process.

Now, beginning with Creative Energy, we request that the participants introduce themselves by coming up to the podium and stating who they represent and, if desired, a statement of their expected outcomes for this workshop.

16                   Thank you, and we can now start with the  
17                   introductions before turning the process over to  
18                   Creative Energy.

19 MR. IYER: Good afternoon. I hope everyone can hear me.  
20 I am Krishnan Iyer. I am president and CEO of  
21 Creative Energy. I started here just four weeks ago.  
22 And I have here with me Kelsey Devine, Kieran  
23 McConnell, Louis Parker, and Anee (inaudible) from  
24 Creative Energy. And we also have our legal,  
25 financial and technical advisors, some of whom are  
26 part of this presentation today.

1                   I'd like to acknowledge the presence of  
2 Jacqueline Che, from our shareholders in Westbank, and  
3 Jack Bittan from Emanate Energy Solutions as well.

4                   We thank this Commission for organizing  
5 this workshop. This will help us present our  
6 application for the planned redevelopment and how we  
7 are committed to modernizing the plant and improving  
8 efficiencies with minimum impact to ratepayers.

9                   We have an agenda. Bring up the agenda.

10                  So I'd like to focus on that for the next  
11 two and a half hours. And as part of this  
12 presentation, we will also address the Commission's  
13 questions forwarded to us as part of the guidance to  
14 this workshop.

15                  As I mentioned, I joined Creative four  
16 weeks ago, and prior to this I was working for  
17 Infrastructure of Ontario -- Infrastructure Ontario,  
18 for close to four years, as the chief financial  
19 officer and heading up the infrastructure landing  
20 practice. Infrastructure Ontario is -- our main  
21 mandate was to build large infrastructure projects for  
22 the public/private partnership, the province of  
23 Ontario, for transferring the risk. And on budget and  
24 on time. And prior to that, I was with a very large  
25 geotechnical company called Enwave District Energy for  
26 14 years, as chief financial officer and chief

1 operating officer. And that was a company 20 years  
2 ago when I joined was almost like that Creative Energy  
3 is today, with continued success of operations over  
4 the years, but embarking on large development and  
5 growth.

6 And that company built the world-famous  
7 Deep Lake water cooling project extracting cold energy  
8 from Lake Ontario, and using it to air-condition  
9 downtown core office and residential buildings, and  
10 also some of the hospitals and a diverse mix of  
11 customers. Plus during my tenure there, I had the  
12 opportunity to lead a major portion of the steam plant  
13 redevelopment, very successfully, at Enwave Energy. I  
14 see a lot of balance between my experience at Enwave  
15 and also what I seen in creating in front of us mainly  
16 this plant redevelopment project, and also the  
17 proposed plant fuel switch project down the road, for  
18 converting to low-carbon source of energy.

19 The focus of this application is the plant  
20 redevelopment, but first the need to replace some of  
21 the major components of the existing steam plant.

22 The steam plant is located at 720 Beatty  
23 Street, at the corner of Georgia Street and Beatty,  
24 adjacent to Georgia Viaduct and across Expo Boulevard  
25 from B.C. Place. It's 14 kilometres worth of pipe  
26 network under ground, built in the City of Vancouver

1 and serving over 200 customers.

2 **Proceeding Time 1:38 p.m. T03**

3 Approximately serving 40 families 44 million square  
4 feet of real estate. It's one of the largest in the  
5 country, in district energy.

6 And the customers that Creative Energy has  
7 been servicing with steam distribution network varies  
8 from residential office towers to distinct sporting  
9 arenas like B.C. Place Stadium, Roger's Arena,  
10 Vancouver Public Library and some of the commercial  
11 buildings as well.

12 Over fifty years the system, the plant  
13 operations has been properly maintained and has  
14 provided virtually uninterrupted thermal service to  
15 the customers. Some of the major improvements is now  
16 past or at its design life requiring replacement or  
17 major refurbishment, or else we'll increase the risk  
18 of capacity curtailment in the future.

19 So this project, the planned redevelopment  
20 is -- little bit of background is in the course of  
21 exploring the options for refurbishing or replacing  
22 the end of life components of the steam plant, and the  
23 vacant portion of the land at 720 Beatty Street,  
24 Creative Energy -- within Westbank Road, initiated a  
25 unique opportunity to upgrade the steam plant and the  
26 office space as part of the larger redevelopment of

1           the site and adjacent area without interrupting steam  
2           service and at lower cost to customers than any  
3           alternate solutions.

4                 The opportunity is first to build a smaller  
5           size plant offsite adjacent to the plant that will be  
6           operational and serve customers with uninterrupted  
7           heat during summer months and shoulder months, during  
8           which time the existing plant undergoes renovation  
9           work. All in coordination with redevelopment by a  
10          developer of the space involved adjacent to the  
11          existing plant.

12                 Creative Energy is able to move forward  
13          with a cost-effective solution for providing safe and  
14          reliable steam service to customers for years to come.

15                 The capital cost of the proposed project is  
16          approximately 53 million of which Creative Energy will  
17          be responsible only for 15 million with the developer  
18          subsidizing Creative Energy for the remainder.

19                 The application in front of you is also to  
20          request approval of several corporate reorganizations,  
21          steps that are required to separate the development  
22          real estate currently held by Creative Energy from  
23          Creative Energy's utility business to facilitate the  
24          proposed project and the developer's project on a tax  
25          efficient basis and to facilitate the acquisition by  
26          Emanate Energy Solutions of the indirect 50 percent

1 equity interest in Creative Energy's utility business.

2 Emanate is a wholly-owned subsidiary of  
3 InstarAGF Asset Management, and they are being -- they  
4 have operating assets in Western Canada, including a  
5 windmill farm in Okanagan and interest in steel refit  
6 (inaudible) operation, a mid-stream service company,  
7 and they have active wealth of experience in industry  
8 and directing particular business.

9 This application is crucial to Creative  
10 Energy's future, and we look forward to the  
11 Commission's proceedings reviewment. And I think you  
12 should continue with the presentation. I'll turn over  
13 to --

14 THE CHAIRPERSON: Pardon me. We were supposed to do  
15 introductions. We're going to try to introduce the  
16 people in the room who are going to be speaking and  
17 potentially asking questions.

18 MR. IYER: Sure.

19 THE CHAIRPERSON: That's the first step and then we can  
20 begin with the presentations.

21 MR. IYER: So you want me to introduce the people who  
22 will be speaking?

23 THE CHAIRPERSON: No, I'm going to -- I would like the  
24 people to come up to where you're standing and  
25 introduce themselves first to the other participants  
26 here.

1 MR. IYER: Okay.

2 THE CHAIRPERSON: So starting on the left-hand side of  
3 the room. There's a few more people than we expected.  
4 Those that, you know, intend to be actively involved,  
5 would you like to come up and introduce yourself? In  
6 behind.

7 MR. BURSEY: Thank you. Mr. Miller gave me a wave to  
8 come up. My name is David Bursey. I'm here on behalf  
9 on B.C. Pavilion Corporation, PavCo. And with me is  
10 my associate Charlotte Teal.

**Proceeding Time 1:43 p.m. T4**

12       We'll be here today to observe and take notes. I'm  
13       not sure we'll have any questions. We have a --  
14       sorry. PavCo has contractual arrangements with  
15       Creative related to the project. Thank you.

16 THE CHAIRPERSON: Thank you, Mr. Bursey.

17 MR. WONG: Hello. My name is Victor Wong from MMP LLP  
18 and I'm here as a consultant to the Commission. With  
19 me is my colleague Maggie Chan. And similar to my  
20 fellow, we are here to observe and listen. Thank you  
21 very much.

22 THE CHAIRPERSON: Thanks very much.

23 MR. SLATER: Hi, my name is Doug Slater. I am general  
24 manager at FortisBC Alternative Energy Services, here  
25 today to learn more about the application.

26 THE CHAIRPERSON: Thanks, Mr. Slater.

1 MS. BAINS: Hello, my name is Bea Bains and I'm manager  
2 of Energy Products and Services at FortisBC Energy  
3 Inc. and I'm here to observe and take notes largely.

4 THE CHAIRPERSON: Thank you, Ms. Bains.

5 MR. WEAFER: Good afternoon. My name is Chris Weafer and  
6 I'm counsel for the Commercial Energy Consumers  
7 Association of British Columbia. And with me is David  
8 Craig and Janet Rhodes who are consultants with the  
9 Commercial Energy Consumers. And also from our office  
10 at Owen Bird is articling student Patrick Weafer will  
11 be assisting. And we are here to primary observe  
12 today.

13 We filed a fairly detailed intervention  
14 letter with some detail topics that we think will  
15 probably lend themselves more in the information  
16 request process. So we're here more today to get a  
17 better understanding of the bigger picture that is  
18 before us today.

19 So thank you.

20 THE CHAIRPERSON: Thank you very much, Mr. Weafer.

21 MR. MILLER: Paul Miller, Commission counsel.

22 MR. LOSKI: Tom Loski, consultant with the Commission  
23 Staff.

24 THE CHAIRPERSON: Thank you, Mr. Loski.

25 MS. UZICANIN: Lejla Uzicanin, Senior economist with the  
26 BCUC.

1 MS. GUZMAN: Bonny Guzman, regulatory analyst with the  
2 BCUC.

3 MR. PLAHA: Amit Plaha, regulatory analyst with BCUC.

4 MR. CHUNG: Hillary Cheung, regulatory economist with the  
5 BCUC.

6 THE CHAIRPERSON: Thank you for all your introductions.

7 Now I turn it over to Creative.

8 MR. IYER: All right, thank you. I'll ask Kieran  
9 McConnell to walk through the plant history.

10 MR. WEAFER: Mr. Chair, is there a handout of the  
11 presentation? That would be most helpful.

12 THE CHAIRPERSON: There's been a request for handout. Do  
13 you have them available, by any chance? Perfect.

14 MR. WEAFER: Thank you.

15 THE CHAIRPERSON: And don't forget the panel. We need  
16 our props. Thank you.

17 In the interest of time, because I think  
18 you've got a fairly fulsome presentation, maybe we  
19 could start and we'll just interrupt you slightly when  
20 they're available.

21 MR. McCONNELL: Sure, that sounds good.

22 Okay. Good afternoon everyone. I'm Kieran  
23 McConnell, I'm the director of engineering with  
24 Creative Energy. I'm going to walk through the early  
25 part of the agenda. But I guess a couple things first  
26 is in advance of the workshop we received guidelines

1                   from the Utilities Commission. Our presentation here  
2                   is intended to address and speak to those guidelines  
3                   not necessarily in the same order in which the  
4                   questions were framed within the guidelines. But we  
5                   believe we'll address it all here.

6                   **Proceeding Time 1:48 p.m. T5**

7                   And second, more than happy as I go, and as  
8                   the rest of our speakers get up here to address  
9                   clarifying questions, don't feel the need to leave the  
10                  clarifying questions for the end, but sort of make  
11                  sure everybody understands the project as we go.

12                  So, to start, I'd like to speak a little  
13                  bit about the history of Creative Energy. It's  
14                  important to understand the context of the plant and  
15                  the system as it relates to this project. So, the  
16                  origins of Creative Energy were the Central Heat  
17                  Distribution Limited system founded in the mid 60s by  
18                  a group of Vancouver businessmen looking to address a  
19                  problem of air quality in Vancouver, where a lot of  
20                  buildings were being developed and installing, you  
21                  know, burning other forms of fossil fuel; coal,  
22                  natural gas, oil, et cetera. And creating air quality  
23                  issues in Vancouver. And a group of businessmen  
24                  looked to solve that by creating, you know, a really  
25                  high efficiency clean burning system based on natural  
26                  gas at a centralized location. And so formed Central

1                   Heat.

2                   And did that by taking over the former  
3                   location of the Vancouver Press. So, you know,  
4                   printing press. And you'll see as I walk through the  
5                   orientation of the plant, very linear plant. And not  
6                   purpose-built for to be a steam plant. Quite  
7                   different from what you'd see in a modern purpose-  
8                   built facility. So, it was -- this picture actually  
9                   is from 1965, the installation of our first boiler.  
10                  There's now six boilers there. I'll walk through  
11                  that.

12                  And -- it's right here. This is the plant.  
13                  This picture -- we don't know the exact date, but it's  
14                  certainly from the probably early 60s. You can see  
15                  the existing plant here. I'll walk up to the -- this  
16                  is the plant here.

17                  And to the right of that would be now where  
18                  the Georgia Viaduct is, just for orientation. You can  
19                  see it was on the proximity of the -- you know, really  
20                  a very industrial area. Now B.C. Place is there. Of  
21                  course the tons of development has occurred, and  
22                  continues to occur, in the area. So, quite different  
23                  from how it is today.

24                  And this is just another picture from later  
25                  in the 60s, down Georgia Street, as our main steam  
26                  distribution line built out down Georgia Street,

1           branches north and south, and through the various  
2           streets of downtown to serve our 200 -- oh, sorry,  
3           I've got the wrong button. I'm trying to do it twice,  
4           on my laptop here as well. So that I can track my  
5           notes.

6           But the system really built out  
7           significantly in the late 60s and early 70s, maybe  
8           adding 5 to 10 new customers per year. You can see  
9           it's a little hard on the -- with the scale here, but  
10          on the -- in the sidewalk along the south side of  
11          Georgia Street, these excavation places, our main  
12          steam header is installed down Georgia Street, and  
13          that's the large building on the left, the top left,  
14          is the Vancouver Post Office.

15          This is the -- just sort of a simplified  
16          drawing of the layout of our plant. What I really  
17          want to point out is that two things. One, you can  
18          see boilers one, two, three, four, five, six. That's  
19          named in the order in which they were installed, so  
20          starting with number one. And north is to the left in  
21          this drawing.

22          And the boilers were installed sort of  
23          phased in time with the growth of the system as a  
24          whole. So, boilers one and two were installed in the  
25          mid 60s, number three in, I think, '73. Going on from  
26          there. And the last one being number six, which is a

1           little bit to the east of the rest of the plant. And  
2           there are -- it is important to know that was  
3           installed in 1994, and I think there was a question  
4           related to what part of the plant was added in '94.  
5           So that entire section where boiler number six sits  
6           was an addition to the existing plant in 1994.

7           And then most important to note in the  
8           context of our project is that the only entrance to  
9           the plant that's large enough to -- you know, that's  
10          not a manhole, that's large enough to bring a large  
11          piece of equipment in, is to the south, or in this  
12          drawing to the right where you can see the large  
13          doors. And it's created a situation where you have  
14          the old -- the equipment most needing to be replaced,  
15          so the boilers from the -- that are now 50 years old,  
16          being -- and the one part of the plant where equipment  
17          can't be brought in, because there is other pieces of  
18          equipment in between. So that's why in this project  
19          we've essentially proposed to retire the oldest -- the  
20          equipment at end of life, so boilers one and two, and  
21          boiler four. And maintain the equipment with life  
22          left in it.

23           So, trying to move along here. So, this is  
24          our -- the list of the existing boilers in the plant,  
25          and their ages. I want to explain, because this is in  
26          part of the application. We've got this column of

functional capacity. I want to differentiate that from the rated capacity. So all boilers, of course, have a nameplate capacity on them.

Through the many years of operating history  
of the plant, we've got -- in fact all of our boilers  
no longer operate at the same nameplate rating. And  
the real -- what we've found is that, you know, this  
really aged equipment that our operators have really  
discovered that it's difficult to operate the  
equipment at those high output levels. Just as an  
example, over this last winter boiler number one,  
where you can see we've essentially downrated its  
useable capacitors -- functional capacity to 50,000  
pounds an hour from 100,000 pounds an hour.

**Proceeding Time 1:54 p.m. T06**

What we discovered is that if we operated it -- so  
that's about 50 percent. So if we operate above 50  
percent, the boiler, over the course of the winter  
starts to develop cracks in the tubes and has a higher  
maintenance requirement and we have to do a  
significant amount of maintenance on the summer -- or  
on the boiler in the summer period when we can shut it  
down.

24 So that's why we've got this table of  
25 functional capacity and that's what we consider to be  
26 the usable capacity of the boilers under design

1           conditions in the winter. And that is important to  
2           understand in the context of how we made decisions  
3           around what capacity we need going forward.

4           So another important aspect is our plans  
5           for -- the long-term plans for the system. An  
6           important element here is what we call the fuel switch  
7           project. As we filed in our long-term resource plan  
8           in 2017, Creative Energy does continue to pursue a  
9           fuel switch project. We've been working on this for  
10          about four years now. I'll just orient the project  
11          quickly so that people understand what the basic  
12          project is.

13          If you follow the green line -- that's our  
14          plant, is the orange sort of triangle-ish shape called  
15          the Beatty Street plant, and down in the bottom right-  
16          hand corner, the green square, is what we call the  
17          greenhouse, which is a project we've been pursuing to  
18          build a base-load plant for the system burning clean  
19          urban wood waste to reduce the carbon footprint of our  
20          existing steam system, interconnected to our plant  
21          with a high pressure steam line, which is the green  
22          line connecting the green square to our existing  
23          plant.

24          Yeah, so that's the fuel switch project.  
25          This is a rendering of the greenhouse.

26          So the greenhouse is -- it's a 65 megawatt

1           plant in the business case. Not all of that load is  
2           assigned to our core steam system. Some of it is  
3           assigned to new loads and to other neighbouring  
4           systems. But what it would contribute is about  
5           150,000 pounds per hour of baseload capacity into the  
6           system.

7           Oh, and I should mention -- yeah, my notes  
8           were -- where we are today is we are actively speaking  
9           with government about the lack of incentives for this  
10          project. So one of the guideline questions was to  
11          speak about how the fuel switch project relates to  
12          this project and if we were doing the fuel switch,  
13          would this project be any different.

14          So I'll just step through the table here.  
15          Our current forecast peak demand is about 580,000  
16          pounds per hour from that, two slides ago, the table  
17          of the functional capacities. We have about 630,000  
18          pounds of functional capacity. So we have a small  
19          amount of headroom above our forecast peak, not a lot.

20          After the proposed project we would have a  
21          new functional capacity for our plant of 740,000  
22          pounds an hour, so we're gaining a little bit more  
23          headroom. If we were to complete the fuel switch  
24          project, we'd have -- as I said on the last slide,  
25          that adds about 150,000 pounds per hour of baseload  
26          capacity to the system and that gets us to 890,000

1       pounds per hour of sort of functional capacity post  
2       fuel switch.

So there's a couple of key points here.

4 One is that, first of all, as I showed, the fuel  
5 switch is a different fuel. It runs on woodchips.  
6 It's about a two kilometre interconnection distance  
7 away from the existing system. So it doesn't operate  
8 at the same level of reliability as our current  
9 system. You know, to note, we've had -- we're  
10 currently on about a thirty year streak of no major  
11 outages of our system. That's something that we'd  
12 like to -- that's a streak we'd like to continue.

13                   And you know, we think it's important. The  
14 current project is necessary in terms of preserving  
15 that reliability. The fuel switch does not -- would  
16 not remove the need to have the reliable and peaking  
17 capacity within our existing distribution network.

**Proceeding Time 1:59 p.m. T7**

19 And you know, one point is that we're -- as  
20 you see, we're not removing boiler number three, which  
21 is within this current project. And it is approaching  
22 the end of life. So, the plan here is really to use  
23 number three as a -- to extend the life through  
24 refurbishment as long as we can, until we either  
25 expand our load to the point where it needs to be  
26 replaced, or we execute the fuel switch project, which

1           might enable the retirement of boiler number three.

2           So that we still have the reliable peak capacity that  
3           we need to meet our load.

4           But one thing that the fuel switch may do  
5           is relieve some of the pressure at the end of term for  
6           the Expo plant, where we have a 40-year lease on that  
7           project. It may relieve some of the pressure to renew  
8           that lease at the end of term.

9           And finally, the -- you know, you probably  
10          see in the table of peak demand here in our current  
11          capacity that we don't have N plus 1 redundancy in our  
12          system. We have a long street. There's no  
13          requirement to have N plus 1 in a system like this,  
14          and we have no -- you know, no ability to get there  
15          with the current plant. And this helps to, you know,  
16          unlock a possibility that the N plus 1, if we decide  
17          that that makes sense in the future.

18          We had another guideline question related  
19          to hot water conversion of the system. So, you know,  
20          as Krishnan had opened, we have about 14 and a half  
21          kilometres of buried steam lines running through  
22          congested urban part of downtown Vancouver. We would  
23          love to convert it to hot water. If you were to build  
24          this network from new today, you likely would build it  
25          in hot water rather than steam, because of the higher  
26          efficiency of hot water. But to be frank, it's -- you

1 know, it's a very -- it would be a very expensive  
2 project. I think the overnight, we've done a little  
3 -- some study on it. The overnight cost to convert  
4 the steam system to hot water would exceed a hundred  
5 million dollars. It doesn't make sense to do that as,  
6 you know, the single project.

7 But, you know, steam does have a really  
8 important role because in the dense urban area where  
9 our steam lines sit, steam is very effective at  
10 transmitting a lot of energy, taking up a relatively  
11 small corridor. So, yeah. Through this project and  
12 particularly, you know, going forward with the fuel  
13 switch, none of the assets -- or all our assets will  
14 remain useful, particularly in the distribution  
15 system.

16 So, just sort of tying together the project  
17 drivers. The plant's been operating for 50 years.  
18 That's pretty much the expected design life of some of  
19 the major equipment in our plant. So we have  
20 significant pieces of equipment reaching end of life.

21 The building where our plant sits does not  
22 conform to current standards and codes, particularly  
23 seismic codes and fire code. The new equipment within  
24 the Expo project and the -- or in the Expo plant, in  
25 the Beatty plant, will have automation and the  
26 efficiency and emission controls of a new and modern

1 plant, and that's a significant benefit not just to  
2 our customers but to the public. And the current  
3 office space is fairly limited as well. It's not  
4 accessible, there's a lack of daylight, poor  
5 ventilation, et cetera.

Okay. Going to walk through the -- sort of  
the lay of the land of the project itself. This is --  
the larger outline in red is the property upon which  
the plant sits. On the left is the existing surplus  
property, which was disposed of in 2016. And the blue  
outline is the existing plant, and then below to the  
right on the other side of Expo, within -- you can see  
sort of the beginning of the curve of B.C. Place  
Stadium is the proposed location of the Expo plant,  
which carries off the page.

16                   This is the proposed plant. We call it the  
17                   Expo plant in the application, so it's just for  
18                   simplicity of language. It's the plant within --  
19                   located within B.C. Place. This is at the east end of  
20                   the stadium, so adjacent to Griffiths Way, or -- it  
21                   almost sits underneath the Georgia Viaduct.

1                   dashed line, I think, is the edge of that new ramp.

2                   So, just a little bit of orientation. Two  
3                   boilers, you can see -- a little tough to see on the  
4                   rendering, but boiler number one and boiler number  
5                   two, so two 200,000 pound per hour boilers which are  
6                   the same size as our current largest boiler in the  
7                   existing plant, boiler number six. And all the  
8                   associated equipment that goes with those boilers to  
9                   run a standalone plant. So deaerator, feed water  
10                  pumps, water softeners, feed water pumps, generator,  
11                  chemical treatment, control room, et cetera.

12                  And this is the -- a rendering of the  
13                  Beatty plant. So that is the existing plant minus the  
14                  boilers, which we are proposing to remove one, two and  
15                  four. And the footprint contracted to basically take  
16                  up the space that we need for the pieces of equipment  
17                  that are going to remain, which are boilers three,  
18                  five and six, and the associated deaerator, water  
19                  softeners, chemicals, test equipment, et cetera, et  
20                  cetera.

21                  So, and this is the sort of amoeba-shaped  
22                  outline is the proposed development above. So, really  
23                  the plant is going to sit on level -- well, currently  
24                  the plant largely sits below grade, and the office  
25                  spaces sit at grade. So the new plant will -- it  
26                  isn't being physically relocated. The equipment which

1           is remaining will stay where it is. And it ends up  
2           being located in sort of levels P3, P2, P1, and some  
3           of -- there's a little bit of equipment which extends  
4           up to L1 and L2 within the new development, and then  
5           the office space will sit on level 2 of the  
6           development, taking up a small part of the floor plate  
7           of the new development.

8                 There will, yeah, be new diesel generators  
9           and new diesel fuel tanks. The existing tanks are  
10           really at end of life. And yeah, the development will  
11           house the structure around.

12               We've had a guideline question related to  
13           permits and licenses. So, this is the current list.  
14           Air quality permit for the plant, operating permits  
15           from Technical Safety B.C., the development requires  
16           rezoning enactments, development permit, building  
17           permit, occupancy permit. So, normal permits for a  
18           redevelopment in Vancouver.

19               Important to note that the -- because the  
20           question related to the costs and who bears the risks  
21           of these permits, that all these permits are at the  
22           risk of the developer in the project, not at the risk  
23           of Creative Energy, because our risk is capped at the  
24           \$15 million. But I will speak a little bit more  
25           directly to risk in a moment.

26               Right now. So, we had a guideline question

about, you know, I think it said, essentially, what  
are -- to list all the risks with the project. I  
think in the context of a workshop, and a project of  
this complexity and scale, and at the level to which  
we -- the project has been developed, we can't speak  
to every single risk in the project. We could be here  
for days. So we've grouped the risks into a few  
categories. And, you know, really I think the point  
is to outline how Creative Energy has offset most of  
-- very nearly all these risks.

11 So, just broadly speaking, the risks  
12 associated with the trust property are the  
13 responsibility of the developer. Any degradation of  
14 service due to the project, so due to the development  
15 of the trust property, the developer bears those  
16 responsibilities. Cost risks associated with the  
17 project, so, construction cost over-runs, could be  
18 change in the pricing of the equipment, fluctuations  
19 in currency or tariffs are another significant risk at  
20 this point borne by the developer, not by Creative  
21 Energy.

22 Tax risks of the projects are borne by the  
23 developer, not by Creative Energy.

24 Proceeding Time 2:08 p.m. TO9

25 And then the only one where we have really  
26 any real exposure is if we create a schedule delay

1           through, you know, lack of responsiveness on our part  
2           to something, and that delay creates a cost for the  
3           project, we bear the risk of that cost. We see this  
4           as a relatively low risk mitigated through, you know,  
5           having a high quality planning and scheduling for the  
6           project, and you know, an experienced and competent  
7           team to execute our part of the project. And we're  
8           able to mitigate a fair bit through contract with the  
9           contractors who are going to build the project for us.

10          THE CHAIRPERSON: Excuse me, just a point of  
11           clarification. Go back to the slide. In terms of  
12           degradation and service, you've got "not applicable".  
13           Are you saying that there's no possibility of it  
14           occurring?

15          MR. McCONNELL: No, I'm not saying there's no possibility  
16           of degradation of services occurring, I'm saying that  
17           through the trust and development agreement that the  
18           developer bears the financial burden of that risk.

19          THE CHAIRPERSON: Yeah, okay.

20          MR. McCONNELL: We had a bit of a goof in our  
21           application, that we have a schedule in the body of  
22           the application. Another schedule is an appendix to  
23           -- or as an appendix to the trust and development  
24           agreement which was also filed, and the two didn't  
25           match. And it turns out, we've checked, and the  
26           schedule which was attached to the trust and

1 development agreement was erroneous. We, somehow  
2 through the projection of the agreement, some errors  
3 crept through. So we'll be refiling the corrected  
4 schedules, restating the trust and development  
5 agreement, and we'll refile that. And I'll just  
6 clarify the milestones here just sort of for clarity  
7 of the discussion today and for going forward.

8 The intention is to, you know, pending  
9 regulatory approval, we'd start construction of the  
10 Expo plant in January of the coming year, complete in  
11 October, and then if you've looked at the application,  
12 it requires -- the idea really is to start the Expo  
13 plant allowing us to do work on the Beatty plant  
14 including demolishing and abating the old boilers and  
15 removing them. So it requires a number of shutdowns  
16 which can only be done in off-peak season, so the  
17 sequence of construction really hinges on shutting the  
18 project down from April to October for three  
19 successive years. Those years of course, in 2020 and  
20 2021 and 2022. And really it's -- by the end of '22  
21 our part of the project is complete. The development  
22 won't be complete and it will take until 2023 to  
23 finish.

24 Yeah, and sorry, on the schedule I should  
25 have stated, the developer is in charge of the  
26 schedule and Creative Energy is indemnified for delays

1                   incurred by the developer.

2                   And I'm going to hand it over to Kelsey  
3                   Devine who is going to speak about public  
4                   consultation.

5 MS. DEVINE:     Hi, I'm Kelsey Devine from Creative Energy.  
6                   I'm going to go quickly through public consultation  
7                   that we've done and that we are intending to do.

8                   So all of our 200 plus steam customers will  
9                   be impacted by this project, mostly on the rate side  
10                  of things and what is going to be absorbed into rates  
11                  and how that's going to impact them going forward.

12                  So we have done some preliminary public  
13                  consultation. We hosted an open house outlining the  
14                  proposed project. That was back in November. One of  
15                  the key factors that wasn't included in that  
16                  consultation at that time was the amount of the  
17                  project that would put into rates. Creative Energy  
18                  and developer at that time were still negotiating what  
19                  the contribution payment would be by Creative at that  
20                  time.

21                  So the rate impact was something that we  
22                  felt we would save till later on. We've decided a  
23                  survey to our customers may be a better way to engage  
24                  and get some feedback on that. We did only have three  
25                  customers and the public open house that was held in  
26                  November.

**Proceeding Time 2:13 p.m. T10**

2 So our intention now, we are working on  
3 putting together a survey that will be emailed to our  
4 customers in early September, hoping that we get some  
5 more feedback on that, and the potential rate impact  
6 will be the main communication point through that  
7 survey.

The other smaller portion of this project  
that is impacting Creative Energy is the new office  
space we're getting. As Kieran mentioned, our current  
office space sits above the plant on Beatty street.  
It is quite an old building, not meeting Codes. There  
is no wheelchair accessibility. We have one kind of  
old service elevator at the south end of the site.  
Not all the office spaces in the building are  
connected to that though. So, it limits the employees  
that we can have, as well as not meeting building  
codes.

19 Our current office space is quite  
20 constrained. It's an awkward L-shape. We only have  
21 windows on one end of our site. And the lack of  
22 daylight is something that I think a lot of us have  
23 noticed, does cause quite an impact. So, that lack of  
24 natural light has been a big issue. It is also quite  
25 a small space. Currently I think we have one desk  
26 open, and there isn't a lot of room for growth in the

1 building. There of course are other options to move  
2 sites and whatnot, but one benefit that we really do  
3 have is the proximity of the plant to have our  
4 operations manager be able just walk downstairs, and  
5 have us be right there on site is something that we  
6 are looking forward to retaining by moving into the  
7 new office space.

8 So this development is giving us the  
9 opportunity to stay on the site. There will be no  
10 great impact of this new office space. We are  
11 essentially getting it at no cost as one of the  
12 benefits of this project. So, we think that will be  
13 both a benefit to having us have an improved office  
14 space, but also staying right in our current location  
15 and being close to the plant.

16 I am going to turn it over to Ian Webb, and  
17 I think he is going to go through the list of orders.

18 MR. WEBB: Hello, I am Ian Webb from Lawson Lundell,  
19 counsel to Creative Energy for this application. And  
20 I am going to go through the nature of the requested  
21 orders. And I am not going to speak to the underlying  
22 transactions and projects and investments that give  
23 rise to the need for these orders, that is the subject  
24 matter of the rest of the presentation on the  
25 application. But just to go over the orders requested  
26 and why they've structured them the way they have.

1                   So, firstly we have the CPCN, and that is  
2                   for Creative Energy to construct and operate the  
3                   proposed project. That being the entire project,  
4                   which has an estimated cost of \$53.1 million.  
5                   However, Creative Energy's portion of that cost is  
6                   limited to \$15 million, subject to a couple of  
7                   exceptions which are identified in the application.  
8                   And by the way, there is a specific form of proposed  
9                   order included in the application.

10 So, we have a need for a CPCN for the  
11 project, but limitation on the amount being recovered  
12 in rates, so how do we bridge the word from the CPCN  
13 to the rate setting? Everybody wants transparency  
14 that the project is approved on the basis of the \$15  
15 million cost to Creative Energy. And so what we're  
16 proposing in the order to address that issue is that  
17 the CPCN be conditioned on that \$15 million number,  
18 and no custom specific language on that in the  
19 proposed order which I won't get into right now.

20                   Secondly, acceptance of additional capital  
21 expenditures, up to \$5.25 million. I apologize, there  
22 is a typo in that slide, it should be pursuant to  
23 Section 44.2 of the *Utilities Commission*, not 33.2.

24                           And this expenditure is a contingent  
25 possible future expenditure pursuant to the trust and  
26 development agreement. Again, I am not going to get

1 into all the details of the underlying transaction,  
2 which will be addressed later in the presentation, but  
3 at a very high level the developer is going to be  
4 putting in equipment which is oversized and capable of  
5 additional capacity in the plant in the future. And  
6 if Creative Energy decides to increase that capacity  
7 in the Beatty Plant, then there would be a second  
8 payment to the developer onto that increase. And so  
9 that is what this requested order is about. And  
10 again, the details will be in the presentation.

Proceeding Time 2:19 p.m. T11

12                   Thirdly, approval to establish a regulatory  
13 deferral account, pursuant to Section 56 and 60 of the  
14 *Utilities Commission Act*. There will be assets which  
15 will be retired and taken out of service, which have  
16 remaining undepreciated net book value. The current  
17 estimate of that amount is \$2.9 million, but that is  
18 very much an estimate at this time. And so the  
19 purpose of this regulatory account is to capture that  
20 undepreciated net book value, to enable Creative  
21 Energy to carry forward and come forward to the  
22 Commission with a proposal for recovery of that amount  
23 from customers.

24 Approval of a new service agreement with  
25 B.C. Pavilion Corporation, pursuant to *Utilities*  
26 *Commission Act Section 60 and 61.* The point of

1 delivery for B.C. Place Stadium, which is an existing  
2 Creative Energy customer, will be changed when the  
3 Expo plant is built within B.C. Place. And that was  
4 really the driver for the new service agreement. And  
5 in connection with developing that new service  
6 agreement, there are a few variances from Creative  
7 Energy's standard service agreement. Table 15 of the  
8 application identifies all of those variances, and a  
9 copy of the contract is provided in Appendix L of the  
10 application.

11 Lastly, approval of corporate  
12 reorganization steps. And later in the presentation  
13 I'll be walking through the corporate reorganization  
14 steps. I'm not going to do that at this point of the  
15 presentation. But the nature of the orders required  
16 in connection with the reorganization are pursuant to  
17 Sections 50, 52, 53 and 54 of the Act. So the  
18 reorganization involves the repurchase and issuance of  
19 shares in a public utility, disposition of shares or  
20 other property of a public utility other than in the  
21 normal course of business, amalgamation involving a  
22 public utility, and there's a specific question from  
23 the Commission about that, which again we'll be  
24 returning to later in the presentation. And transfer  
25 of shares in a public utility resulting in a  
26 reviewable interest.

1                   At a very high level, there's sort of three  
2                   purposes to the reorganization. The steps are  
3                   complex, to be sure. But there are three purposes:  
4                   facilitate the proposed project that is the subject of  
5                   the application; the developers' project, being the  
6                   office tower; the development and transfer of asset  
7                   surplus to the utility needs on a tax-efficient basis.  
8                   And the acquisition by Emanate Energy of an indirect  
9                   50 percent equity interest in the utility business.  
10                  The utility business being the Creative Energy assets,  
11                  excluding these surplus assets, which are also  
12                  referred to as the "trust property".

13                  Each of the requested orders is directly  
14                  related to the proposed project except that the  
15                  acquisition of Emanate Energy, of an indirect 50  
16                  percent equity interest in the utility, is proposed to  
17                  be completed as part of the reorganization, but it is  
18                  otherwise independent of the reorganization steps to  
19                  facilitate the project themselves. The requested  
20                  orders are not separable in the sense of they're all  
21                  related to the project, and all interconnected, and  
22                  can't be (inaudible).

23                  At this point, we're a little bit behind  
24                  schedule, not too bad, but we propose to take the  
25                  break at this point. If that works. Fifteen minutes?

26 THE CHAIRPERSON: Certainly.

1      MR. WEBB:    Okay, thank you.

2      **(PROCEEDINGS ADJOURNED AT 2:24 P.M.)**

3      **(PROCEEDING RESUMED AT 2:42 P.M.)**                            **T12/13**

4      THE CHAIRPERSON:   Please be seated.

5      MR. BERRY:    Good afternoon, panel members, intervenors.

6                 My name is Trent Berry. I'm here on behalf of  
7                 Creative Energy. I actually chair the board of  
8                 Creative Energy Vancouver and Canada. I was actually  
9                 responsible for the negotiations of the transaction  
10                with Emanate on behalf of the Board and the  
11                negotiations around the trust and development  
12                agreement. Unfortunately I've been tasked with  
13                discussing the financial model which was run by my  
14                colleague Will Cleaton of Reshape who couldn't be here  
15                for this workshop, in the interests of time. That  
16                model and the analysis I'll present was used in the  
17                negotiations, so I'm adequately familiar with it, but  
18                if there's questions of detail, we'll be punting those  
19                to IRs. But I should be able to handle questions of  
20                clarification.

21     THE CHAIRPERSON:   Fair enough.

22     MR. BERRY:    Great. And we're not too far behind. I want  
23                to clarify too, I welcome any questions of  
24                clarification as we go along. I also will be fairly  
25                quick. We've got more details in the slides than I  
26                intend to actually speak to, but it's there if you

1           would like to dive into anything in particular. So  
2           I'm just -- really the way to think about this section  
3           is orienting you to what's in the application and some  
4           of the big picture items, especially things that were  
5           asked in the Commission's questions prior to the  
6           workshop. Okay?

7           So we've also handed out a one-pager which  
8           I will turn to in a few slides. So I'll tell you when  
9           to turn to that. But I'm going to stick with the main  
10          presentation for now.

11          The first thing that I'm going to do,  
12          because it kind of builds on Kieran's analysis -- yes,  
13          Chris.

14    MR. WEAFER: Do we have the one-page handout? I don't  
15          think we got it.

16    VOICE: I was going to hand it out, Chris, when Trent  
17          gets to it.

18    MR. BERRY: Oh, sorry, I thought it had already been  
19          handed out.

20          So that first thing typical in CPCN is to  
21          talk about the load resource balance. Kieran talked  
22          about the project, the existing capacity, about what  
23          we've tried to do, outlined it graphically. And this  
24          is also an important input to the financial analysis  
25          and the indicative rate impacts that are presented in  
26          the application.

1                   So to orient you, to the left here on the  
2 graph is Creative Energy's actual energy sales and  
3 actual peak for the last ten-odd years. And then we  
4 have a forecast. And one thing that I want to be  
5 really clear on in the forecast is Creative Energy has  
6 been purposely conservative with respect to  
7 forecasting load, which has the effect of over-  
8 estimating indicative rate impacts. And it was done  
9 just to show that the rate impact for refurbishing the  
10 plant is reasonable and in our estimation, it will be  
11 less, but what we've done is used a conservative load  
12 forecast.

13                  You can appreciate, with only 215-odd  
14 customers, a few of which are very large, a decision  
15 by a single customer, which is not easy to  
16 statistically forecast, can have a big impact. And  
17 one of the biggest impacts that we've taken into  
18 account is the planned movement of St. Paul's Hospital  
19 which will be moving out of the downtown core, if they  
20 stay to plan. That's always moved around. They've  
21 been a customer from the very beginning, virtually, of  
22 the plant. They have no onsite generation. The plan  
23 is for them to build a new hospital in False Creek  
24 Flats, near the VIA Rail Station, and the future use  
25 of that site is up in the air. So we have not taken  
26 into account any replacement load for St. Paul's.

The reason it's very conservative, that  
although we're pretty certain that the hospital will  
move, but the exact timing is uncertain. We have been  
conservative by projecting the entire hospital coming  
off at the very beginning of this analysis. That is  
wildly conservative because it will likely be a phased  
movement, and we wouldn't anticipate the full hospital  
retreating from that site for at least five years,  
probably beyond that. But that's what we've assumed.

So what you will see, as we've accounted for some net increases and net reductions, no net increases in net reductions in load. One of the net increases is some additional load at northeast False Creek. Although I will point out that the city has made the decision to expand southeast False Creek and take over the remainder of all further new development in northeast False Creek in order to meet the low carbon requirement based on the Commission's decision with respect to the NEFC franchise agreement.

20 Proceeding Time 2:47 p.m. T14

21 So what we've included in the steam load,  
22 and it's currently served by the plant, is just  
23 committed customers to the data back.

24 So the net -- there's a net reduction of  
25 about 6 percent under those assumptions in load, and  
26 that's what's assumed in the indicative rate impact.

1           And you'll see here the design -- these are design  
2           weather conditions. So actual peak goes up and down.  
3           But one thing that's really important to highlight in  
4           this slide is that, for all of the talk about  
5           movement, change of customers, efficiency upgrades,  
6           it's very unusual to see reductions in peak demand,  
7           which is what this project has required. We need the  
8           full capacity to serve the peaks in the middle of a  
9           very cold winter. That doesn't change as rapidly as,  
10          maybe, changes in underlying energy loads do, because  
11          a retrofit project might affect annual energy a bit.  
12          But it won't necessarily affect the peak demand,  
13          particularly of these old buildings.

14           So, we are forecasting the peak on the  
15          right, as Kieran said, is close to 590,000 pounds per  
16          hour.

17           So here's the load resource balance, and  
18          the capacity reserve that Creative has historically  
19          maintained. About 8 percent historically. That is  
20          coming down very rapidly. The operators have made  
21          decisions to de-rate, functionally de-rate some of the  
22          capacity. And that is actually driven by what we've  
23          observed in the last couple of winters. We've had  
24          some of the highest peak demand requirements on the  
25          system, because we've had some -- despite the summer  
26          weather, we've had some -- also some very cold

1 weather, particularly in 2017. And so we are now  
2 observing what the full capacity of those boilers is.  
3 And then what we show here is the projected functional  
4 capacity post-redevelopment. So this part of the  
5 curve here.

6 And the reason there's two lines is that  
7 the top line includes the new capacity at Expo plant,  
8 retaining the current boilers. But it also includes  
9 boiler number three, which is at or very -- almost at  
10 the end of its useful life. If that is entirely  
11 eliminated or de-rated, the capacity comes back down  
12 to current levels, even after this project.

13 So post-redevelopment is about a 29 percent  
14 capacity reserve margin versus historical, at close to  
15 10 percent. But that is largely provided by a boiler  
16 that's already almost 50 years old. So once that's  
17 removed, we're back down to historical levels of  
18 capacity reserve. And as Kieran mentioned, we don't  
19 actually have a plan to meet N minus 1 criterion. In  
20 other words, if the largest piece of equipment comes  
21 off line, it doesn't meet the peak demand, which is  
22 not a legal requirement. It's been fine to date. But  
23 that is a desirable requirement in the utility  
24 industry. And the point I'm making here is that the  
25 plant is not over capacity in any way.

26 So, I'm just going to walk you through

1           really quickly the analysis. So the proposed project,  
2           as Kieran described and Kelsey described, involves  
3           distributing the plant, rebuilding around the plant,  
4           upgrading the building, retaining as much existing  
5           equipment as we can. That total cost is upwards of  
6           \$53 million. I want to highlight here, and I'll come  
7           back to it later, that in fact that doesn't include  
8           one other cost element to the developer. As an  
9           inducement to PavCo, and this is on the public record  
10          because PavCo had to issue a notice of intent around  
11          the lease. The developer, separate from this  
12          analysis, has also paid a \$2.5 million inducement to  
13          PavCo to host the plant. And I'll come back to that  
14          when we talk about the lease rate that is the  
15          responsibility of Creative Energy directly.

16           So the full cost is actually upwards of \$55  
17          million and you can put a plus sign next to that,  
18          because the developer takes all cost risk: tariffs,  
19          construction cost escalation and so on. Creative's  
20          contribution to the project is capped at 15 million,  
21          but for two things, schedule delays caused by  
22          Creative, which Jim's already talked to.

23           The second one, and I'm just going to flag  
24          it here, but we're not talking about it as a risk, is  
25          that if Creative voluntarily seeks scope changes,  
26          those are separate from this agreement. But that's

not a risk, because those are conscious decisions we're making for other reasons. If we get another big customer come online between now and completion of the project, and we want to expand the capacity of the plant, which is a good thing, that will be Creative's responsibility. They are responsible for the scope, the base scope as outlined.

**Proceeding Time 2:52 p.m. T15**

We prepared an analysis of an alternative.  
It doesn't involve the redevelopment. Basically  
assumes that Creative replaces the existing equipment  
and plant in situ, and I'll talk a little bit about  
that as we go on.

14 So the alternative to the proposed project,  
15 which we haven't really outlined, is, as I said, to do  
16 an in situ redevelopment of the plant. Basically the  
17 company's do nothing is no longer an option. It  
18 has operated very well, but as you can see, it's at  
19 the end of its useful life. We do not think it's  
20 prudent to wait until failure to replace something.  
21 That is never prudent. And as you see, the layout of  
22 the plant, you can imagine if one of those boilers  
23 actually had a catastrophic failure, there would be  
24 huge lead time to deal with residual capacity.

25                   This is a huge plant. I remember talking  
26                   with BC Hydro about the peak demand on Creative

1           Energy's system, and they were shocked to learn 300  
2           megawatts, and they didn't realize how much electric  
3           load they don't serve, because it's not served by  
4           electricity. But that's another substation in  
5           downtown Vancouver.

6           So it's a huge plant, it's a steam plant.  
7           There's lead time to get equipment but there's also a  
8           lot difficulty replacing equipment in a plant that was  
9           not purpose-built as an energy facility. So do  
10          nothing is not an option in the company's view.

11          The second option was just to construct an  
12          entirely new plant, and the company ruled that out.

13          (a) it's really hard to find sites. You wouldn't  
14          build a new energy plant in downtown Vancouver. Look  
15          at the difficulty BC Hydro is having finding  
16          substations in downtown Vancouver.

17          The next logical location is to the flats,  
18          but land has high speculative value and would be  
19          acquired at new and additional cost. And we wouldn't  
20          be able to repurpose a lot of equipment that we're  
21          retaining in the plant, including the three boilers  
22          that we believe still have remaining life, and a  
23          number of ancillary equipment.

24          So the proposed project or alternative is  
25          an in situ redevelopment, and the challenge of an in  
26          situ redevelopment is building around an operating

1 plant. Creative Energy has a single energy plant. We  
2 do not have the benefit of a multi-plant system.  
3 Enwave in Toronto has a couple of plants. Even there,  
4 they couldn't serve the entire system from one plant.  
5 How do you maintain an existing plant and continuous  
6 operation to meet demand while you are building around  
7 and replacing boilers?

So the developer's approach was to build a satellite plant to allow shutdowns of the main plant during shoulder and low demand season, and then bring it back on line because we need both pieces of capacity. If Creative was to do it itself, the proposal is to do what happened with boiler six, which is to build an extension to the existing building, just like they did in '94 and to put in a new approximately 300,000 pound per hour boiler. Once that's working and commissioned, you could then go and start decommissioning and taking out some of the other equipment. But even to do that, you'd be removing parts of the building, and in that process we'd be upgrading the building for seismic, fire and so on.

I will also note that the proposed project  
is 400,000 pounds per hour of new capacity. The cost  
estimate that I'm going to show you for the  
alternative project only assumed about 300,000 pounds  
per hour for a new boiler. So it's not even the full

1 scope of the proposed project. And secondly, it  
2 doesn't include any major upgrades to the office  
3 space, at least from a cost perspective. It also  
4 doesn't include extending the stacks. The stacks in  
5 the existing plant will be replaced and extended up  
6 through the core of the building so they will be above  
7 the height of the building and a new economizer  
8 installed as part of that. And as Kieran's analysis  
9 has shown, the current economizer is at the end of its  
10 life.

11 So, the cost of that alternative, if we  
12 were to do it, is 34.4 million including AFUDC, but as  
13 I noted, it's a smaller scope. Normally, in a normal  
14 utility 100 percent of that would be borne by the  
15 ratepayers. It's a utility project. And although  
16 parts of the project could be deferred with some risk,  
17 we've done PV analysis, present value analysis of  
18 deferring portions of the project even a couple of  
19 years and it still doesn't come anywhere near the 15  
20 million consideration plus the brand new plant in this  
21 one.

22 The Commission Staff asked a question  
23 about, well, in the alternative, doesn't it include  
24 redevelopment. So let me explain that.

25 **Proceeding Time 2:57 p.m. T16**

26 The airspace above the plant -- so the

1           parking lot that Kieran showed to the south of the  
2           plant, has already -- and I'll just clarify something  
3           Kieran said. We've already received Commission  
4           approval to remove it subject to subdivision from the  
5           Utility. It is no longer in Rate Base. It has  
6           effectively been removed, it just hasn't been legally  
7           separated, because it is part of one parcel.

8                 As the developer looked at ways to develop  
9           that surplus property, they conceived of this larger  
10           project to extend into the airspace above the plant.  
11           But, they've come up with the least-cost way to do  
12           that. You can appreciate that the developer has no  
13           interest in paying \$55 million for a project if they  
14           don't need to. And they have looked at it a number of  
15           ways, and the easiest way is to build the satellite  
16           plant, and then to build around the existing plant in  
17           order to do seismic upgrades, completely replace the  
18           shell and build the stacks up over it.

19                 If we weren't part of that redevelopment,  
20           somebody would have to come in and try to build over  
21           an operating plant. The developer looked at how to do  
22           that, and it is just very cost prohibitive to build  
23           over an operating plant, build a transfer above the  
24           plant, and try to build an office tower above it.

25                 Okay, so before I move on, there was a  
26           question about the value of that surplus land? So now

1 I'm going to turn, and I won't put it up on the  
2 screen, but you have a hard copy, or we'll hand it  
3 out. I'm just going to point you to the economics and  
4 cost or value of the land and surplus property, and  
5 then the remainder of my presentation I think I can go  
6 through fairly quickly. This is the more complicated  
7 thing to walk you through.

8 So, as Kieran noted in his, he showed you  
9 the large footprint of the plant, but to orient you,  
10 there is actually two legal parcels. One is referred  
11 to 701 Expo. For those of you who go to Costco  
12 underneath BC Place, there is like this escarpment, it  
13 is actually a huge drop off with chain link fence?  
14 That's 701, the small triangle to the back of the  
15 property. There is nothing really on it, the company  
16 uses that as storage trucks and that kind of thing.  
17 That is a single legal parcel, it has no development  
18 rights, per se. It's not zoned. It is part of the  
19 northeast False Creek planning area.

20 720 Beatty, which is where the main plant  
21 sits and has partially been removed, or we have  
22 approval to partially remove, is a separate legal  
23 parcel, sits within the Downtown Central Business  
24 District, which is zoned office only. We never really  
25 talked about it because the development isn't really  
26 part of this application, that's between the developer

1 and the city, but it is an office building. It is not  
2 a strata office. The company did not want stratas or  
3 residential uses above an operating plant, or beside  
4 an operating plant. And BC Place and PavCo wasn't  
5 really interested in having residential right next to  
6 Stadium like that. So, it is an office building, and  
7 it's also in the view cones. So, there are huge  
8 restrictions on the height of development and so on.

9 So, what I've shown you in this table is  
10 the current lay of the land, no pun intended, to the  
11 VAT land value that's underneath that, and how it  
12 relates to the 15 million consideration.

13 So you can see that 720 Beatty is the  
14 larger parcel, it's about 51, 52,000 square feet. I  
15 will use imperial units, because a lot of the older  
16 agreements are imperial units. 701 Expo is about  
17 25,000 square feet, but very constrained, difficult to  
18 develop site.

19 Only 39,000 approximately square feet of  
20 the Beatty site remains in rate base. That's the  
21 footprint of the plant and some ancillary space around  
22 the plant. All of 701 Expo remains in rate base.

23 The footprint of the current plant,  
24 ignoring heights and so on, so this is just the  
25 horizontal footprint, is about 23,000 square feet at  
26 the site. So the remainder is all that extra space

1 around, including setbacks from sidewalk and so on.  
2 And the area of the office space that Creative Energy  
3 occupies above is about 2800 square feet. And I'll  
4 note that the office building actually includes non-  
5 utility third party tenants that have never been part  
6 of the utility rates or that portion of the building  
7 is excluded from rate base.

8 **Proceeding Time 3:01 p.m. T17**

9 Okay. So the value of the land in rate  
10 base on the original costs is quite shocking to me  
11 when you see numbers like this. But the value of the  
12 land for 720 Beatty, purchased in the mid-60s, is  
13 approximately \$46,000. Quite shocking, but that's  
14 what it is. Expo site was actually acquired with the  
15 approval of the Commission later, and the value of  
16 that site is 520,000 in rate base.

17 So, the question was asked about land  
18 value, and what we've used is the property tax  
19 assessment from last year. I will note that the --  
20 and this is in the RRA. The assessed value of the  
21 land at that site increased twofold last year. So it  
22 went from 25 million to roughly almost \$50 million in  
23 a single year. A lot of that was from trading of  
24 other sites around the facility, and the biggest one,  
25 the most notable one, would be the Post Office site  
26 just up the road.

1                   But what you have to keep in mind is, none  
2                   of those sites have an operating steam plant that  
3                   occupies and will remain there, and have to be built  
4                   around and will take up part of the space. And I  
5                   should say, it's not just the steam plant. All of the  
6                   steam headers come to that site. That is essentially  
7                   the distribution centre for the entire steam system.  
8                   There are several legs of steam pipes that leave and  
9                   are not looped. So it is the distribution hub for the  
10                  entire downtown system. Even if we were to move the  
11                  plant, any steam line has to come back into that plant  
12                  to go out into the distribution network, because  
13                  they're radial lines.

14                  So, if you look at the gross land value,  
15                  according to the property tax assessment of both  
16                  parcels -- this is the Expo site and the Beatty site,  
17                  it's about \$52 million in the assessed value. We have  
18                  to remove the parking lot portion. It's already been  
19                  excluded, and we have approval to subdivide. So that  
20                  leaves \$37 million. That is generous, because we have  
21                  pro-rated it based on the horizontal area.

22                  What you have to remember is that the  
23                  parking lot has essentially no encumbrances. There is  
24                  no operating plant on it. You could put a small  
25                  office building on it. There's not a lot to build  
26                  around. The plant itself has huge encumbrances, but

1           we've pro-rated the value there so we're at 37  
2           million.

3           Of that, the assessment authority has  
4           attributed approximately 10 million in value to the  
5           plant itself. So that's the space that the plant  
6           occupies on that site. So that's the plant itself.  
7           And then all the rest is for the office building that  
8           currently sits above, plus in theory residual  
9           development rights. And the site is zoned for 7 FSR.

10          So when you net out all of those things  
11          less original costs, the land value for this site is  
12          about \$29 million. That assumes there would be a  
13          willing purchaser that would take on the encumbrances  
14          of building around an operating the plant and so on.  
15          That's based on comparables with other sites that  
16          don't have such encumbrances.

17          Now we come to compare that with what the  
18          developer is doing, in order to access the air space  
19          above the parcel. They're effectively paying 40-plus  
20          million dollar for a consideration. So they're  
21          building the Expo plant, they're paying an inducement  
22          to PavCo, and they're building all of the ancillary  
23          equipment plus the office space, which Creative Energy  
24          will receive back at fee simple ownership, at original  
25          costs.

26          So I might add that Creative's rates don't

1 include market value of office space. They are --  
2 ratepayers are paying original costs of that building,  
3 which is now 40-odd million -- 40-odd years old, in  
4 excess of that, with no major renovations.

5 So they will not pay market value. They  
6 will get fee simple office space back. And so, that  
7 compares to the 29 million in theoretical or  
8 hypothetical land value underlying the site.

9 I'm sure there will be more questions. I'm  
10 sure there will be more questions on that, and IRs,  
11 but I just wanted to orient you, because it was one of  
12 the questions that Commission Staff had asked.

13 So, unless there is any immediate questions  
14 for clarification, I'm going to move on. Okay?

15 Great. I know it's a lot, but I'm going to  
16 go quicker on this part, and then we'll get to the  
17 wonderful legal issues that Ian will present.

18 So, again, the purpose of my presentation  
19 here is to orient you to the analysis. I'm not going  
20 to go through it in huge amount of detail, but I just  
21 want to orient you and give you the bottom-line number  
22 here.

23 **Proceeding Time 3:06 p.m. T18**

24 So, what the company has done is provide  
25 indicative rate impacts of the 15 million. And I say  
26 indicative because while we're seeking approval of 15

1 million, what happens with the remainder of rates is  
2 uncertain. So we are looking at the indicative impact  
3 of the project and 15 million in capital plus some  
4 other ancillary impacts of the project on operating  
5 costs.

6 So what we've done is isolated all the  
7 incremental impacts of the project, and we've overlaid  
8 those on a BAU, or business as usual assumption about  
9 rates to estimate an indicative rate impact, which in  
10 our view is conservative.

11 We're going to show the indicative rate  
12 impact and bill impact for 2023, because it's really a  
13 step change and then it continues on from there. And  
14 the reason we're showing rate and bill impacts and  
15 this is very important, and in my experience for the  
16 last few years since acquiring Central Heat, is  
17 there's a lot of misunderstanding about Central Heat  
18 rates, but the bills are really comprised of two  
19 components: the steam rate which covers the cost of  
20 all of the distribution at plant, staff and overheads,  
21 and then there's a fuel cost adjustment which is a  
22 flow-through of fuel costs.

23 The reason that we wanted to show both is  
24 that part of the benefit of this project is some  
25 significant efficiency upgrades in the plant, which  
26 will reduce the fuel cost recovery portion of the

bill. Even though there's an impact on the steam tariff, it's mitigated in part by reduction in the fuel cost recovery.

4 So here briefly is just steam rates, what  
5 we've done for the baseline. The company, and I won't  
6 go into detail, but the company has an application  
7 before the Commission for what's called an index-based  
8 rate of 2 percent a year, which effectively, in the  
9 company's view, is about what it requires for the next  
10 five years. What we've done is carried that forward  
11 and assumed just inflationary adjustments beyond that  
12 as a business as usual baseline. So that's the steam  
13 rate.

The fuel cost adjustment includes a natural gas price forecast, which is based on Sproule and is the one that Fortis uses, Hydro uses in long-term resource planning and we've been using in our resource plans including for the fuel-switch study. And that fuel cost adjustment charge includes both the commodity costs, transportation charges as well as carbon tax. And includes the currently committed provincial commitments to raise the carbon tax and nothing beyond that.

24 So we have a total bill impact per N pound,  
25 and that's our baseline. I would like to point out  
26 that we view this baseline as entirely hypothetical

1           and in some respects a unicorn because it assumes no  
2           increase in sustaining capital. So in other words,  
3           we're comparing ourselves against an assumption that  
4           the plant can operate in its current state with the  
5           current levels of sustaining capital of about a  
6           million dollars a year, which is both for the  
7           distribution system and for the central plant,  
8           indefinitely. So that's the baseline that we've  
9           chosen to compare the project against.

10           So here's what happens with the project,  
11           and we're not taking any position with respect to how  
12           rates get phased in. So they have just for graphical  
13           and for simplicity purposes been shown as a continuous  
14           phase-in to 2023. What we're really focusing on in  
15           the application is the delta at 2023. The company  
16           will apply post-application and post-actual completion  
17           and the contribution from Creative is paid in two  
18           instalments. We'll be applying for final rates based  
19           on those installments and knowing some of the other  
20           elements of what equipment is being retired prior to  
21           it going into service.

22           So in 2023 the steam rate, the incremental  
23           impact of the project is 15.6 percent on base rates  
24           including adjustments for the loss of load. And the  
25           fuel cost adjustment, because there's efficiency  
26           upgrades, is 4.2 percent reduction.

1                   That's significant. It's a large plant.  
2                   It's the largest consumer of natural gas in the city  
3                   of Vancouver, and also associated with that efficiency  
4                   upgrade from the new boilers is GHG reductions with  
5                   the project.

6                   So the net impact on bills is 3.8 percent,  
7                   and again that's conservative, assuming no replacement  
8                   loads for St. Paul or other loads added.

9                   I won't go through the details. The  
10                  application contains a table that shows all of the way  
11                  that we got to those numbers. The key thing is that  
12                  what we've added is the baseline revenue adjusted for  
13                  load forecast. But the key impact of the project is  
14                  we removed land from rate base, ported part of the  
15                  land from rate base. And then we add back in the  
16                  contribution payment and there was a net change in the  
17                  ROE and carrying charges and depreciation.

18                  The plant, the new plant will in fact use  
19                  more electricity. A newer plant. The company is  
20                  planning to electrify more process loads. We believe  
21                  that's prudent. Although steam can be cheaper, it is  
22                  more GHG intensive and so the increase in electricity  
23                  or electrification of plant will contribute to GHG  
24                  reductions.

25                  We've added in the lease payment, and I'll  
26                  come back to that, because that was a Commission

1                   question. We've added in the lease payment for the  
2                   Beatty plant and the change in property taxes which is  
3                   quite significant because we're basically  
4                   rationalizing the plant. So we are removing a  
5                   significant portion of the property taxes from  
6                   ratepayers and some changes -- MAA stands for the  
7                   municipal access agreement, which is just a percentage  
8                   on Creative Energy's revenue that goes to the City of  
9                   Vancouver.

10                  More significantly is the change in fuel  
11                  costs as a result of it.

12                  So again, I'm not going to speak to the  
13                  detailed numbers, but the other analysis we did, we  
14                  did an indicative rate impact and then we also did an  
15                  NPV analysis, and again it's conservative in the sense  
16                  that we present valued the project payment and then we  
17                  present valued the various incremental costs and  
18                  benefits from the project to ratepayers, again  
19                  ignoring the avoided costs of any new capital in the  
20                  baseline.

21                  **Proceeding Time 3:13 p.m. T19**

22                  And basically you can see the largest  
23                  impact of this project is about, in present value  
24                  terms, an \$8.5 million reduction in natural gas costs  
25                  for ratepayers. And that also comes with GHG savings  
26                  and avoidance of capital costs. We've also projected

1           some reduction in sustaining capital for the central  
2           plant, because it's a brand-new plant, that you would  
3           expect to see some reduction for the first 10 to 15  
4           years in sustaining capital, when you put in brand-new  
5           equipment.

6           So the net costs of the project to  
7           ratepayers, the way to think about it, is about \$3.9  
8           million after your present-value costs and benefits,  
9           and ignores the fact that actually ratepayers still  
10          have -- without this project, still have a very old  
11          plant to try to maintain.

12           We've already -- I've already talked to  
13          these. There's a bunch of other normal onsite  
14          benefits. Kelsey mentioned the office space. We  
15          believe that this increases reliability and resilience  
16          at a point when we're likely to see increased risk  
17          from catastrophic failure going forward. We're  
18          avoiding future capital replacements, which are not  
19          included in that analysis. It does significantly  
20          increase the operability and ease of upgrades and  
21          capital replacements going forward. Because the plant  
22          will be better oriented to replace equipment over  
23          time.

24           And then there are -- we can't  
25          underestimate huge benefits for the surrounding  
26          neighbourhood. Although we argue that's part of the

1           public interest test, of course is not for ratepayers  
2           to pay. But this plant is smack in the middle of the  
3           transition from downtown to the entertainment  
4           district, and we're raising the stacks. We're hiding  
5           the stacks. We're putting a public plaza -- the  
6           developer is putting a public plaza behind the plant,  
7           to integrate with B.C. Place as the viaducts come out.  
8           So it's a very important site in downtown Vancouver.

9                 This just shows you that the value of the  
10          alternative of \$30-odd million, if we defer completion  
11          -- and you can see that we'd have to be able to defer  
12          any replacements in the plant to beyond 2035 before we  
13          start to approach the cost of this project for  
14          ratepayers.

15                 So I'm just going to orient you. I'm not  
16          going to speak to them all. The application includes  
17          a full range of sensitivity analyses. This is all in  
18          the application. We've just shown it in graphical  
19          format for this presentation, which also forms part of  
20          the record. And there are a whole bunch of scenarios  
21          with lower bill impacts. In particular, load -- if  
22          there is replacement load, or St. Paul's is -- does  
23          not fully move by 2024; if carbon tax continues to  
24          increase beyond current commitments, we do -- again,  
25          the modeled efficiency benefit, we think, can be  
26          squeezed up over time.

1                   And on the other side of that, a lot of the  
2 reduction in benefits, or higher bill impacts, would  
3 come from government's completely phasing out carbon  
4 taxes, or natural gas prices completely changing.  
5 Because remember one of the benefits of this project  
6 is avoiding natural gas.

7                   Okay. I mentioned -- and I'm almost done.  
8 The Commission asked a few questions, more questions  
9 about the secondary payment, as we call it. So as Ian  
10 alluded, Orders sought include a secondary payment to  
11 the developer. And to be clear, the developer is  
12 paying all of the upgrades of Beatty, but Creative is  
13 only contributing a portion of that cost. And that  
14 was negotiated because Creative, and including the new  
15 shareholder, which has quite a bit of concern about  
16 maintaining load and the health of the assets, didn't  
17 feel that existing ratepayers can or should bear the  
18 cost of having some surplus capacity available. We  
19 don't have the luxury of a Fortis or BC Hydro with 2  
20 million customers, where they can bear some of these  
21 costs of extensions and bearing carrying costs for  
22 maintaining a little bit of surplus capacity.

23                  So what we did was negotiate that the  
24 developer will pay for all of that and if Creative  
25 should need incremental capacity, and again this is  
26 replacing -- not replacing capacity, it is literally

1 expanding the capacity of the plant in some fashion.  
2 Then there would be a secondary contribution.

**Proceeding Time 3:17 p.m. T20**

That's capped at \$5.2 million. That works  
out to about \$70,000 a megawatt. We estimate about 75  
megawatts of excess capacity can be accommodated in  
plant space and ancillary equipment. You'd still have  
to come in and replace or install a bigger boiler, so  
that is not included in that cost.

10                   The developer does not in fact approve any  
11 expansion. If we never use it, we never pay the  
12 developer. And it is not the developer, they can't  
13 preclude expansion. And that expansion would be good  
14 news. It means that the system is growing, it  
15 requires more capacity, and if it passes an extension  
16 test, it's good for existing ratepayers, and of course  
17 it's subject to BCUC approval.

1           that is also capped, that it's only within the first  
2           20 years of the project. So, in theory, the maximum  
3           utility payment for Beatty is 11.25 million, but  
4           really existing ratepayers, they are no-risk or cost  
5           for the 5.25 million.

6           I just wanted to orient you, we didn't put  
7           this detail in the application, but it was a  
8           Commission question, so I will give you a little bit  
9           of detail, what does that really mean? We think it is  
10          principled. Normally a utility would carry some  
11          capacity, and it would normally be ratepayers carrying  
12          that capacity, but we thought neither ratepayers nor  
13          the shareholder should do that. So the developer is  
14          taking that risk. \$70,000 a megawatt, if you look at  
15          a brand new plant, they are paying \$200,000 a megawatt  
16          all installed to build Expo. So, \$70,000 and 50,000  
17          of that is just for the boilers themselves, a  
18          megawatt.

19           The other 150,000, what does that cover?  
20          That covers the space, all the ancillary equipment,  
21          hookups, flues, so on and so forth. But at Beatty,  
22          that's all been built. So the 70,000 is a recovery of  
23          that historical cost. But it is only being allocated  
24          to growth should that ever occur. And by the way, if  
25          Creative adds capacity elsewhere, like at the fuel  
26          switch, it would never trigger that capacity payment

1                   back to the developer.

2                   Amortized over 40 years, that is equivalent  
3                   to about \$2.50 a megawatt hour. Put that into  
4                   perspective, Creative's rates are all-in with fuel  
5                   today on a highly depreciated system about \$60 a  
6                   megawatt hour. New capacity, new plant, would be more  
7                   than that.

8                   Okay, I am almost there. There were a few  
9                   questions about the PavCo SRW payment and depreciation  
10                  of existing assets. So really quickly, the PavCo  
11                  payment was a negotiate payment between Creative, the  
12                  developer and PavCo. Creative Energy, basically our  
13                  principle going into negotiations was ratepayers  
14                  should be no worse off from it. So what we looked at  
15                  was the carrying cost of the freed-up space at the  
16                  existing site, which includes return on historical  
17                  land, property taxes, which are actually the largest  
18                  component of that, and various carrying costs  
19                  associated with the building and depreciation of the  
20                  building.

21                  So, we negotiated an annual fee of about  
22                  178,000 per year, for the first five years. That then  
23                  escalates, there is a normal inflationary escalator,  
24                  it doesn't inflate at land value escalation. It only  
25                  inflates at CPI. But what we didn't point out in the  
26                  application, and I've done it here, is that the

1 developer had to pay an additional inducement of \$2.5  
2 million up front to PavCo. The plan's actually going  
3 in repurposed space, PavCo used to have an inflatable  
4 roof. They have six or seven fan rooms, that are  
5 quite large, and the plant is actually being fit into  
6 one of those rooms, and building a new façade. And  
7 one of the benefits of this arrangement is that we've  
8 also secured a long-term service agreement with PavCo,  
9 which is in the interests of the remaining ratepayers,  
10 because it secures a customer to contribute to the  
11 existing system.

12 PavCo doesn't pay property taxes. So what  
13 we negotiated is the 178 is basically Creative's  
14 avoided cost at the existing site. Should for some  
15 reason the Energy Centre Room as we call it, attract  
16 property taxes, PavCo will in fact be liable for those  
17 taxes up to \$125,000 a year, I am just rounding here,  
18 with appropriate inflationary adjustments based on the  
19 underlying statutory right of way payment. And I  
20 should clarify it's a statutory right of way that we  
21 will receive for the plant.

22 Any actual property taxes in excess of  
23 125,000 would be Creative Energy's responsibility, but  
24 our argument is that is the same risk that Creative  
25 ratepayers would pay at the current plant for  
26 escalation and property taxes.

1                   So, we give the benefit to PavCo of  
2                   property taxes should they not be assessed, but we  
3                   also ensure that they don't retain that benefit if we  
4                   are assessed property taxes.

5                   **Proceeding Time 3:23 p.m. T21**

6                   It is an estimated fee, because it will be  
7                   adjusted based on the final areas, as built, of the  
8                   two plants. But it's a very close approximation. It  
9                   just will be done to survey.

10                  And just so you can do the math -- or you  
11                  don't have to do the math. That works out to just  
12                  over \$19 a square foot for the area of the plant.

13                  Okay. There was a question about the Expo  
14                  plant tenure. The agreement is 40 years. Creative  
15                  would -- Creative plans to renew it, like any tenancy.  
16                  The only reason that the parties negotiated 40 years  
17                  is Creative didn't want to have an obligation beyond  
18                  40 years, because who knows where -- all you can put  
19                  in that space is natural gas, and the city doesn't  
20                  want natural gas by 2050, or shortly thereafter, so  
21                  maybe we won't want a natural gas plant.

22                  The depreciation term for the assets in  
23                  that plant are 40 years, which is consistent with a  
24                  plant of this type. So it will be fully depreciated  
25                  at the end of term. And we have five-year  
26                  notification and it -- if the stadium is still there,

1           our view is PavCo would renew the lease, because there  
2           is really no other viable use for space like that in a  
3           major stadium, that doesn't introduce security risks.

4           Okay. Lastly I will talk to the retired  
5           assets. Creative is seeking recovery of some  
6           outstanding book value of existing assets. And there  
7           were some questions about that. I did want to clarify  
8           something, a discrepancy. So Ian referred to \$2.9  
9           million, but in fact we're not seeking recovery of the  
10          land, the land that's in rate base, because that  
11          obviously just comes out of rate base. So the  
12          ratepayers don't pay for that. What they pay for is  
13          any other asset removed from rate base with remaining  
14          depreciation on it.

15          I guess we're not seeking an actual amount,  
16          and the reason for that -- we're seeking the  
17          principal. And we wanted to just clarify it. It is  
18          standard, in our view, for utilities in B.C., and  
19          we've looked at FEU, BC Hydro, but I've also surveyed  
20          the NEB's system of accounts, California Public  
21          Utilities Commission treatment of retired assets.  
22          Look, actual life never matches depreciation life.

23          Secondly, and we're not in an asset pool.  
24          This is an average. It's a single plant, and that's  
25          all Creative has. There's not, like, other offsetting  
26          averages across a system of plants. But the other

1           thing is that when you go to replace one piece of  
2           equipment, you don't always have the luxury of keeping  
3           a control system that still had some book value.  
4           Like, why would you put a brand-new boiler in and not  
5           replace the control system for that boiler at the same  
6           time?

7           So what we've done is, we've estimated the  
8           outstanding depreciation. But I want to make two  
9           points here. The \$2.5 million is just provided to the  
10          Commission for indicative reasons. We want to  
11          establish the principle and the deferral account, and  
12          we will be coming forward with the final amounts. And  
13          the reason that is today's estimate of undepreciated  
14          value as of today, there's still another three to four  
15          years before a lot of these assets come off. And part  
16          of that depends on the actual timing, if the project  
17          gets delayed.

18           The other point to make is when Creative  
19          Energy acquired Central Heat they still used the  
20          manual ledger. All of the capital assets were  
21          maintained in a manual ledger. And the company will  
22          be going through a more detailed process. We have  
23          computerized the accounting system, but a lot of the  
24          historical assets are in manual ledger. And so there  
25          will be a process of reconciling the ledger to  
26          detailed design.

1                   So, all we're seeking here is the  
2 principle, and the argument is -- and we don't think  
3 this is the test case for that, but we're just seeking  
4 the same treatment that our understanding of other  
5 utilities, with remaining book value, provided that  
6 the Commission sees the project as prudent and  
7 justifiable.

15 All clear. Okay. Thank you very much, Mr.  
16 Chair and Panel.

17 MR. WEBB: Okay. Another part of the application as was  
18 put earlier is corporate reorganization of Creative  
19 Energy. And as I alluded to when I reviewed the  
20 requested Orders, there's really three main purposes.  
21 Corporate reorganization has more than three steps.

22 Proceeding Time 3:29 p.m. T22

23                   But some of the steps are in aid of three  
24                   objectives which are facilitation of the Creative  
25                   Energy project and the developer's project; the  
26                   development and transfer of the assets surplus to the

1                   utility needs, referred to in the documents as the  
2                   trust property. And that's essentially what Trent was  
3                   talking about, the piece of land beside the existing  
4                   plant that the Commission has already approved to be  
5                   disposed of, the rental space within the existing  
6                   office, and the other piece of land which are already  
7                   outside of rate base, notionally as well as the  
8                   airspace above; so notionally what the trust property  
9                   covers.

10                  So to isolate that which is currently owned  
11                  by Creative Energy but not part of the utility, to  
12                  isolate the risks associated with that property and  
13                  the development of it, and on a tax efficient basis,  
14                  and then lastly the acquisition of an indirect 50  
15                  percent interest in the utility. Again, not that  
16                  trust property part that is currently owned by  
17                  Creative Energy and that investment by Emanate Energy.

18                  And just to orient you in terms of what we  
19                  have provided in the application and how that's been  
20                  structured and presented, part 3 of the application  
21                  presents the reorganization. Its more the kind of  
22                  legal perspective in terms of the Commission's  
23                  jurisdiction, the steps that require specific  
24                  Commission approvals, the nature of those approvals,  
25                  the section of the Act apply, and then in Appendix M  
26                  there are slides which more visually present all of

1           the steps beyond just those that require Commission  
2           approval for the broader context.

3           And we've presented this information in  
4           essentially the same format as was presented by an  
5           application before the Commission last year that I  
6           know Commissioner Enns sat on, which was the  
7           reorganization of CalGas. And so we tried to present  
8           the information in a way the Commission has already  
9           seen before and is familiar with based on that recent  
10          application, which was approved in, I believe it was  
11          December of 2017 by order G-128-17. So separate  
12          utility, separate reorganization, but we tried to  
13          present the information in the same way that they did.

14          The reorganization steps are planned to  
15          occur in immediate succession after Commission  
16          approval. The succession of the steps is as set out  
17          in Appendix M of the application. All of the  
18          reorganization steps must be completed prior to  
19          commencement of construction of the Expo plant which  
20          is to begin January 2019.

21 COMMISSIONER ENNS: Mr. Webb, when you say in immediate  
22          succession, do you mean essentially concurrently?

23 MR. WEBB: Yes.

24 COMMISSIONER ENNS: Thank you.

25 MR. WEBB: Now, setting aside the steps and focusing  
26          more on the start and the end and the changes from the

1 start to the end, assuming all of the steps are  
2 completed, that is the reorganization is approved,  
3 what will that look like at the end of all that? The  
4 developer will own and hold the rights to the trust  
5 property for the purpose of developing its office  
6 tower project in accordance with the trust and  
7 development agreement. Emanate Energy will have an  
8 indirect 50 percent equity interest in the Creative  
9 Energy utility excluding that trust property.  
10 Creative Energy's current shareholder, Creative  
11 Canada, will hold the other indirect 50 percent  
12 interest in the utility. Emanate Energy and Creative  
13 Canada will hold their – I keep using this word –  
14 indirect interests because it's through Creative  
15 Energy Developments limited partnership, and I'll  
16 speak to that a bit more in a moment.

17 Now, what we have provided here is, these  
18 are just copies of what's in Appendix M of the  
19 application. And again for orientation sort of  
20 purposes, this is the utility here. Creative Energy  
21 Vancouver platform is referred to in the application  
22 as Creative Energy. It has its heating utility  
23 business and what's referred to here as the  
24 development of real estate, which is the same concept  
25 as the surplus assets, and the trust property, that  
26 lot adjacent which has already been approved for

1 disposition, airspace, and the other lot, which is  
2 again owned by Creative Energy but outside of the  
3 utility and the utility's rate base.

4 **Proceeding Time 3:34 p.m. T23**

5 Creative Canada is the hundred percent  
6 shareholder of Creative Energy, and this over here is  
7 the already existing Creative Energy Developments  
8 limited partnership. Which Emanate Energy Solutions  
9 is already a 50 percent partner. And so again the  
10 utilities over here and this other side is outside of  
11 the utility, but exists today. So this is the  
12 structure as of the time of the application.

13 Another reorganization step, and again,  
14 this is in -- these slides are just reproduced from  
15 what's in Appendix M. And in the upper corner we have  
16 the purpose of these groups of reorganization steps.  
17 The individual steps. And then there's some  
18 additional information on these in the body of the  
19 application, which focuses more on the Commission's  
20 jurisdiction and approvals required in respect of  
21 these steps.

22 So although there are, I think, twelve  
23 steps, there's at least three purposes. And so the  
24 purposes as discussed group them up, into purposes of  
25 these three steps as follows. And these reinforce  
26 that.

1                   So there was a question from the Commission  
2                   about the implications of the tax, cost of land.  
3                   Which is associated with the amalgamation step. And a  
4                   disclaimer. I'm not a tax lawyer by any stretch.  
5                   However, I can explain how this works.

6                   So the purposes of the first three steps,  
7                   which I've shown on this and the next slide, for the  
8                   reorganization is to increase on a tax-deferred basis  
9                   the tax costs of the lands held by Creative Energy  
10                  from its historical cost to the maximum amount  
11                  permissible under the *Income Tax Act*.

12                  The historical tax costs of the land that  
13                  would be developed by the developer is about \$600,000  
14                  as Trent explained earlier. And that was in the one-  
15                  page slide he handed out today, showed the calculation  
16                  of that approximately \$600,000 amount.

17                  If the land cost is not increased as  
18                  proposed, on any future sale of the property any gain  
19                  on sale would be based on this historical cost. Most  
20                  of the original purchase price of the shares of  
21                  Central Heat Distribution would not offset the gain,  
22                  resulting in double tax to the developer.

23                  In respect of attaining a tax-deferred  
24                  increase in the cost of the land to the developer, the  
25                  only alternative to a proposed vertical amalgamation  
26                  would be to wind up Creative Energy and distribute the

1 assets to the parent company, NewCo, here. This  
2 alternative would also allow for the tax cost of the  
3 land to be increased on a tax-deferred basis.  
4 However, the alternative would be much more complex,  
5 as it would involve the wind-up of the utility company  
6 and the distribution of all of its assets to the  
7 parent. The amalgamation, although it does require  
8 the approval, or the consent of the Lieutenant-  
9 Governor-in-Council, so that's a bit of a process  
10 step, is a lot simpler than winding up the utility and  
11 transferring all of its assets.

I understand that Creative Energy did try  
to address this land cost issue when it acquired the  
shares of Central Heat Distribution. However, the  
vendors at that time did not agree to address the  
matter as part of the disposition of their business.

Now, what should be understood about this  
is, it's not a controversial or -- controversial tax  
treatment. Most amalgamations have tax planning as a  
primary objective, and this amalgamation is no  
different. Tax-deferred amalgamations are provided  
for in the *Income Tax Act*, if conditions are met.

23 | Proceeding Time 3:39 p.m. T24

24 The amalgamation step here is no different than any  
25 other amalgamation for the purposes of increasing the  
26 land value. This is a typical strategy and will have

1                   no impact on the utility or its ratepayers.

2                   Similar to the Commission's consideration  
3                   of the amalgamation step in the Cal-Gas  
4                   reorganization, this one step is part of a whole which  
5                   will happen in contemporaneous or immediate  
6                   succession. And as the Commission looked at that  
7                   issue, in that case we suggest it should be looked at  
8                   in this case the same way, which is in the context of  
9                   the whole reorganization.

10                  Given there were some specific questions in  
11                  the workshop guidelines -- are there any questions at  
12                  this point that I might try to answer? Chris?

13                  MR. WEAFER: What is -- I'm sorry, Chris Weafer,  
14                  Commercial Energy Consumers -- Emanate paying for the  
15                  50 percent indirect interest in the utility?

16                  MR. WEBB: I don't know the answer to that.

17                  MR. WEAFER: You can leave it for an undertaking, that's  
18                  fine.

19                  MR. WEBB: If you want, I mean, we're having an IR  
20                  process starting in a couple of weeks.

21                  MR. WEAFER: Sure, that's fine.

22                  MR. WEBB: Okay to move on?

23                  So this slide shows step 3, which is again  
24                  part of those first three steps to increase the tax  
25                  cost of the land. And this is the amalgamation step  
26                  with NewCo and existing utility amalgamating into

1                   Creative Energy Vancouver 2018.

2                   That part done, step 4 is then to  
3                   facilitate the investment by Enwave Energy, and so  
4                   what we're starting to do with the next few steps is  
5                   separate the trust property from the utility that is  
6                   in business of the now amalgamated utility. And there  
7                   is a bunch of shares at the bottom, which I am not  
8                   going to go into.

9                   This is -- the next few steps are the  
10                  establishment of the developer and the transfer of the  
11                  rights to develop the trust property to the developer,  
12                  down the left side there.

13                  There are further details on those same  
14                  steps, put the trust property into the developer's  
15                  hands, and what was at the beginning the development  
16                  real estate and the utility business all under the  
17                  utility, utility business remains and the development  
18                  property has been moved over to the developer.

19                  And then the final couple of steps, the  
20                  Creative Energy Developments Limited Partnership which  
21                  already exists, Creative Canada and Emanate Energy  
22                  which are already the partners of that partnership,  
23                  that partnership becomes the owner of the utility.  
24                  And so there are transfers of share from what used to  
25                  be hundred percent ownership by Creative Canada over  
26                  to the limited partnership of Creative Canada Emanate

1           Energy. And then this is the final state of  
2           reorganization.

3           Any questions at this point? Okay, thanks.  
4           Well that's the reorganization. And we have one last  
5           slide which is on the regulatory timetable.

6           **Proceeding Time 3:44 p.m. T25**

7           There was a specific request for Creative  
8           Energy to comment on proposed process, and so I've  
9           just started here with what the Commission has already  
10          established by Order G-128-18, the workshop we're  
11          having today, BCUC and intervenor IRs to Creative  
12          Energy August 17<sup>th</sup>, Creative Energy's response August  
13          31, and then further process to follow.

14          And skip to the last point. We're well  
15          aware that we've asked for a somewhat expedited  
16          process. Creative Energy is asking for a decision by  
17          December 31<sup>st</sup>. And so for our part we're ready,  
18          willing and able to do our best to accommodate any  
19          schedule which can get us to a decision by December  
20          31<sup>st</sup>.

21          The one other key milestone is we do need  
22          LGIC consent for the amalgamation stuff, and it's of  
23          little use to ask for that consent on December 31<sup>st</sup>,  
24          because we need that consent to be given in time to  
25          get the final decision from the Commission, or all the  
26          approvals from the Commission by December 31<sup>st</sup>.

1                   So an idea that we had -- and we had some  
2 previous discussions with Commission Staff about the  
3 idea, is that the Commission could report to the LGIC  
4 during the process with a recommendation respecting  
5 the amalgamation step. And that could fit into the  
6 schedule by the end of September or early October.

7                   So two thoughts on that. One is there  
8 could be a process to seek the views of interveners.  
9 It could be in the nature of if anybody has an  
10 objection let us know, type thing. And then the  
11 nature of the recommendation to the LGIC could be --  
12 if the LGIC consents to the amalgamation on the  
13 condition that the Commission approves the application  
14 overall.

15                  So we will have a chance to -- we've had a  
16 chance to have this workshop, we'll have one round of  
17 IRs that people can get a better understanding of the  
18 amalgamation step and some level of comfort to at  
19 least advise the Commission we have no objections to  
20 the Commission making that recommendation to the LGIC  
21 that the amalgamation should be consented to on the  
22 condition of approval of the application overall. And  
23 then it's hoped that we would then get that consent  
24 from the LGIC in a timely fashion to facilitate a  
25 Commission decision by the end of the year.

26 COMMISSIONER ENNS: Mr. Webb, do all of the parties

1           involved have December 31<sup>st</sup> year ends?

2    MR. WEBB:   The December 31<sup>st</sup> date is driven by the  
3           construction schedule.

4    COMMISSIONER ENNS:   So there's no concern about stub  
5           periods for tax purposes or anything like that?

6    MR. WEBB:   I'm not sure about the answer to that.

7    COMMISSIONER ENNS:   Okay, fair enough.

8    MR. WEBB:   I was just going to add, the construction  
9           schedule contemplates construction beginning in  
10          January of 2019. In order to get that Expo plant  
11          built such that the Beatty plant can be taken down the  
12          following summer, and if that slides -- it's all tied  
13          around the summer and being able to take the Beatty  
14          plant down during the summer with the Expo plant  
15          carrying the load, and so if things slide at all, that  
16          jeopardizes the schedule.

17                 And just purely point of process, but the  
18          option is available to the Commission as it's done  
19          many times before to put out an order with reason for  
20          decision to follow, if that helps accommodate the  
21          December 31<sup>st</sup> date.

22    THE CHAIRPERSON:   Have you had any discussions with the  
23          provincial government relative to your section 53?

24    MR. WEBB:   We have had internal discussions about it, and  
25          are planning to engage with government staff to make  
26          them aware that this application has been made, or

1 anticipated schedule and kind of warm them up to the  
2 idea that this is going to be coming. They can do  
3 whatever due diligence they want in advance about the  
4 application, any questions that you want, to try to  
5 get that going in parallel.

**Proceeding Time 3:49 p.m. T26**

7 THE CHAIRPERSON: Okay.

8 MR. MILLER: Paul Miller, Boughton. Ian, can you be a  
9 little more precise on what you mean by "early  
10 October"? Are we talking up to the 15<sup>th</sup> or the first  
11 week, or what?

12 MR. WEBB: Well -- no. We're trying to accommodate the  
13 government's process. I don't have insight into how  
14 much time they need. We, for our part, will try to  
15 engage with them well in advance, so that they know  
16 that this is going on. But I think it's safe to say  
17 the more time we give them, the better. But how much  
18 they absolutely need, I don't know.

19 THE CHAIRPERSON: So I'm kind of gathering that the first  
20 round of IRs is very important in this particular  
21 area, that it's as fulsome as possible -- fulsome in  
22 terms of your answers, and in terms of questions.

23 MR. WEBB: Yes. And again, though, I think it can work  
24 of a little process where interveners can comment on  
25 whether they have any concerns, and then that the  
26 recommendation would be consent on the condition that

1                   the Commission approves the application as well. So  
2                   we're not sort of foreclosing the continuing review of  
3                   the merits of the application.

4 THE CHAIRPERSON: Okay. I think there's a question down  
5                   there. Mr. Craig?

6 MR. CRAIG: David Craig, Commercial Energy Consumers.  
7                   Are there conditions that the Commission might set  
8                   that would cause you not to proceed?

9 MR. WEBB: I certainly don't have a list of any such  
10                  conditions. The proposal is the result of, you know,  
11                  extensive and lengthy negotiations between all of the  
12                  parties we've been talking about. And it's a package  
13                  that they have -- that they are comfortable with.

14                  But I know that the request is that all of  
15                  the requested Orders be issued, and that none of those  
16                  Orders can be severed from the others. It's all part  
17                  of the proposal.

18 MR. CRAIG: Yeah. I'm anticipating that you could end up  
19                  with a full set of Orders, but you may have conditions  
20                  that may change some of the parameters that would  
21                  drive the decision.

22 MR. WEBB: Yeah.

23 MR. CRAIG: It sounds possibly like there may be some  
24                  range -- or a considerable range of flexibility with  
25                  regard to what some of those conditions might be. The  
26                  proceeding anyway would just change some of the

1 financial perspectives, possibly.

2 MR. WEBB: All I can say is that I'm confident that if  
3 conditions materially impacted the overall financial  
4 arrangement, that would be of concern to those who are  
5 paying for the project.

6 MR. CRAIG: Yes. By definition.

7 MR. WEBB: Yes.

8 MR. CRAIG: And --

9 MR. WEBB: Their materiality thresholds I can't speak to.

10 MR. CRAIG: So it would remain for IRs, I guess, to  
11 determine what sort of flexibility there might be.

12 MR. WEBB: Yeah, I anticipate you'll ask those questions.

13 MR. CRAIG: Thank you.

14 THE CHAIRPERSON: Do we want to open up, or are there no  
15 questions? Anybody? Please come up.

16 MR. WONG: Victor Wong from MMP. I'm just wondering for  
17 the last appraisal was there any independent appraisal  
18 report conducted other than the B.C. Assessment value?

19 MR. BERRY: There were several comparables that were  
20 looked at. But we've relied on the assessment.

21 MR. WONG: Another question from Victor, MMP. So  
22 regarding the net present value analysis, for the base  
23 case I'm wondering if the volume assumed goes into the  
24 excess capacity that would fit into the 5-2-5 for the  
25 second payment.

26 MR. BERRY: Sorry, can you clarify?

1 MR. WONG: For sure, yeah. So, regarding the net present  
2 value analysis for the base case, so in calculating  
3 that value a certain production level would have been  
4 assumed.

5 MR. BERRY: Mm-hmm.

6 MR. WONG: So would the production level get into that  
7 excess capacity which would trigger the \$5.25 million  
8 of second payment.

9 MR. BERRY: No. So, the plant can actually produce more  
10 on an energy basis. It's driven by capacity. So, if  
11 we had more summer load, that will bring down the rate  
12 impact without triggering the need for new capacity.

**Proceeding Time 3:54 p.m. T27**

What triggers the need for new capacity would be a new customer that requires peak demand or it adds to peak demand.

17 THE CHAIRPERSON: Are there any other questions?

18 MS. UZICANIN: It's Lejla Uzicanin from BCUC. I would  
19 like to ask a question that relates to risk on the  
20 project. The project I assume will shut down the  
21 Beatty plant, several shutdowns, and if you can answer  
22 the question about your assessment of risks associated  
23 to those shutdowns and starting up again, and what is  
24 your contingency plan?

25 MR. BERRY: I can answer how we've allocated risk in the  
26 trust and development agreement, and then I'll let

1                   Kieran speak to the technical issues, if that's okay?

2                   So in the trust and development agreement  
3                   the decision to shut down the plant is made by  
4                   Creative and not the developer. So Creative has to be  
5                   comfortable, so the timing is absolutely sacrosanct.  
6                   Creative can delay the project for valid operating  
7                   reasons.

8                   Once a shutdown is made there is a  
9                   requirement to meet the schedule for bringing the  
10                  plant back online. And if the developer misses that  
11                  and there's a consequence of missing that date, that  
12                  is allocated to the developer at that point.

13                  So the decision to shut down is Creative's  
14                  and if they don't come back on time, that's their  
15                  risk. And I'll let Kieran speak to how comfortable we  
16                  are with the summer load and the ability to carry it  
17                  at Expo.

18 MR. McCONNELL:   So I think there's probably two areas of  
19                  risk that the question was really digging into. One  
20                  is the risk -- correct me if I'm wrong, but the risk  
21                  of being able to meet load in the summer and then the  
22                  subsequent risk of being able to restart the plant in  
23                  the fall when the greater load is coming.

24                  So in the first case our historical summer  
25                  load – just approximate numbers to give a sense of  
26                  scale – is in the range of, you know, on afternoon

1           like today it might be 80,000 to 100,000 pounds an  
2           hour. It might peak at 120,000 pounds an hour,  
3           something. At Expo we have 400,000 pounds an hour of  
4           capacity, so there's, you know, more than double, more  
5           than 100 percent redundancy just at Expo. So not any  
6           real concern about our ability to meet the summer load  
7           through those shutdown periods.

8                 In terms of the risk of delays through the  
9           course of the development project at large preventing  
10           the restart of the plant in the fall when the winter  
11           load is coming, maybe I'll just describe the three  
12           shutdowns briefly, because you sort of have to  
13           understand what we're doing or what we intend to do in  
14           those periods to understand the risk.

15                 The first shutdown is largely about  
16           reservicing the plant. So relocating the gas, water  
17           and electrical feeds to Beatty Street so that the new  
18           services are there to power the boilers come October.  
19                 That's obviously fairly complex and relies on external  
20           parties. There, of course, are some significant  
21           challenges, but a lot of that work can be initiated in  
22           advance of the shutdown. It's, you know, in terms of  
23           bringing new gas mains down, putting in meters. Same  
24           thing with the water and electricity. So with proper  
25           coordination, you know, we think it it's a fairly  
26           manageable risk.

1                   And the second two -- sorry, I guess I'll  
2 speak to the contingency part while I'm on the first  
3 one is that the absolute ultimate contingency if we  
4 can't start up Beatty would be to bring in, at the  
5 developer's cost, some additional form of generation.  
6 So, you know, a temporary steam boiler truck-mounted  
7 or whatever, to provide the capacity that isn't  
8 available by Beatty not being available. So that's  
9 sort of the major contingency plan.

10                  **Proceeding Time 3:59 p.m. T28**

11                  And then the second two shutdowns are  
12 actually very minor tasks. It's really about as the  
13 officer tower gets taller our flues need to be  
14 extended in order to allow the cranes to go up,  
15 because you can't have a winter period where the  
16 cranes are above the flues because there's like sort  
17 of worker safety issues for the crane operator in the  
18 cab, and so they need to be extended. So you'll have  
19 a period in the summer where you can raise the level  
20 of the development, and we need to extend the flues to  
21 match that, so.

22                  It's actually not a particularly high risk  
23 in terms of restarting the plant. Because it's just  
24 about extending stacks to match this need on site. So  
25 don't see those second two shutdowns as carrying any  
26 real significant risk. So. That was a little long-

1                   winded but I hope it addresses the question.

2 THE CHAIRPERSON: Are there any more questions?

3                   Then I think we are pretty much there. I'd  
4                   like to thank Creative Energy for taking the time to  
5                   put together the presentation. I know it wasn't  
6                   necessarily an easy job and I'm sure a lot of  
7                   preparation went into it and it's much appreciated.

8                   I'd also like to thank the participants for  
9                   coming here today and listening to it, and hopefully  
10                  we are all a little bit better informed than we were  
11                  when we walked in the door. And I'll bring this to a  
12                  close and say thanks to all.

13 **(PROCEEDINGS ADJOURNED AT 4:00 P.M.)**

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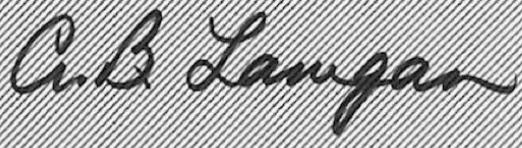
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I HEREBY CERTIFY THAT THE FORGOING  
is a true and accurate transcript  
of the proceedings herein, to the  
best of my skill and ability.

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21  
22                   A.B. Lanigan, Court Reporter  
23

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August 2<sup>nd</sup>, 2018

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