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Event

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Presenter

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- [David] Now, what we're going to do this morning is really two components. One is...the first part is you're going to hear a lot from me. I'm just going to tell you my experience and my story and then we'll have some Q&A and if you don't have enough questions, I've got more stuff I can talk to you at for that hour.

So, we will certainly fill the hour this morning and then we're going to turn things around. There's a little workbook that you've got on your table and you don't have to read the workbook, we're sort of going to go through it. I'll describe it more later, but really, it's a tool for you to potentially take back to your own boards to think about asking the questions that you might need to think about in terms of risk-based oversight, regulatory governance, and some of those emerging issues that I know that you are dealing with.

Sound fair? I want to put you to work for the second half and I strongly suspect you're going to learn an awful lot more in the second half than you can learn on the first half from me. Okay. So, to get started, I'll just give a couple of context slides. On is... David had mentioned about my work with The Directors College of Canada and I do write a number of articles and this particular article, actually, I will admit to this group since no one's going to share this anywhere outside the room, I know, is that I actually wrote this in frustration.

I had a very difficult week with my board. You know, as a CEO, you sometimes have that and I was on my way to Vancouver the next day and I started writing this little article a little bit out of frustration. And the article was around finding the line between the board and executives because that is a very difficult thing to do. And why I wrote this article, in particular, I think is, you know, a number of my friends are in the pure private sector, I would say.

And they sometimes...sometimes the private sector scoffs a little bit about our professions and regulatory professions and boards because they actually think those boards are easier. And the reality is,

I think it's much more complex. The governance that we go through, the stakeholder groups that we have, and often, the number of people that we have around our tables, our councils, is quite large and it makes it a very complex governance structure.

And my hat off to the College of Nurses of Ontario too because I was speaking to their council recently and they are going through quite a transformation, so a real credit to Anne and the whole group there as well. And this article is really about that. So, I often do speak to board such as yours around these types of governance issues as well.

And I have had some experience as well in overseeing professions. So, in Canada, CMA management accounting merged with the CAs and CGAs and became CPA today. So, I'll speak to it in that context as CPA. But I was involved for a decade as an instructor in the two-year executive program that they would have in order to get their professional accounting designation.

And then I also was involved in many committees for a decade and a half and chaired the National Certification Committee and that oversaw the 55,000 accredited candidates that have come through the program and getting their designation in the Board of Examiners and all of those types of details and disciplinary committees that we had. So, certainly familiar with that, CPD and all of those other issues and the cycle of renewal and those sorts of things that we're going to talk about a little bit more today.

So, this is just a little snapshot that I've put together for this presentation of some of the places that I've been speaking over this last while. And this, of course, isn't all of them, but I would say three, four years ago, if you looked at my speaking itinerary, you'd see a lot around the energy sector. I do do a lot of speaking around that emerging electrical trends and smart grid and topics such as that.

And then a lot around just general governance because as a faculty member of The Director's College. But for some strange reason in the last two to three years, I've been speaking more and more to groups that are in the professional regulators or are in the medical space. And I think there's some interesting learnings that are taking place.

There's a lot of cross-learning taking place from different types of regulators and I think that's really good sharing for all of us. Now, I'll talk a little bit about the Kennedy School. Has anyone taken the strategic...? It's quite...they need a better marketing term, I think. Anyway, Strategic Management of Regulatory and Enforcement Agencies course by Malcolm Sparrow.

Has anybody taken that course? At least a few people in the room, so you'll know. It's a really interesting program. It's a week-long program. I'm not here to sell you on the program. I have no interest in it financially, but it's a very interesting program and it is international as well. So, you have folks from regulatory community all around the world.

And it truly is a mix and you have people that are involved in border security type enforcement, you have those involved in financial securities regulation, you have those involved in your profession, in the healthcare space, involved in mine, in regulatory oversight for electricity industries and things like that. It's quite an interesting program. Okay. Just some other further background facts.

The Electrical Safety Authority. Any lawyers in the room? And we're regulatory...probably got quite a few lawyers in the room somewhere. There's a few people. They're just kind of sheepishly putting their hands up really because...I don't know. I don't know what that meant, but anyways, there are a few in the room, so. We are a delegated administrative authority.

Probably doesn't mean too much. If you're at a cocktail party and you said that to somebody, they'd probably walk on and talk to the next person. Especially if I told them I'm an accountant too, that pretty much would push them right away. But a delegated administrative authority, it means we actually have our own source of funds and we are independent of government, sort of. I sometimes think of it as a, it's arm's length from government, but sometimes the arm gets a little shorter, if you know what I mean, depending upon what's going on in the environment.

As you well know in your profession, that arm sometimes gets a little shorter as well depending upon how stakeholders are reacting to things that are taking place in your world. And there have been things. So, we have a very broad mandate which is quite interesting if you read our objects of incorporation, it's very broad and encompasses many, many things. But then we also have specific regulations as well.

And those regulations, if you look at it from a narrow perspective...so, this building, I can see some electrical outlets at the back and light switches and so on, and so on. There's an electrical code that says how this building is wired. Now, electrical outlet has to be a certain distance from the other electrical outlet. It has to be...those switches have to be a certain height from the floor, very prescriptive detailed code.

That's just the tip of the iceberg in terms of how these electrical systems are designed. Okay? So, that's one regulation, is the actual code itself. And then there's a second regulation that we oversee and that is who does that work? So, we license the electrical contractor, so there's a whole licensing regime that we go through that's very familiar to you.

Licensing, CPD, ongoing discipline appeals, and we have lots. We're about a \$120,000,000 organization and we spend about \$3.5 million dollars on legal either in pursuing those operating outside the system or when we're challenged as well on our side.

So, it's a fairly, fairly litigious group. And then a third regulation is we oversee the local distribution company. So that's the larger infrastructure that would be around a city like Chicago, for example. The poles, the wires, all those sorts of things. And then the last one that we oversee as well is electrical product safety. So, we're not a certification body, but any electrical product that comes into a state, a province, a country, goes through a product certification regime.

We're responsible to see that those are safe products and where they're unsafe products, were responsible for seeing that those products, in fact, are removed. Those are the technical regulation pieces. We have about 500 staff. A lot of those are field staff. So, when you see a building like this, when it was being built, for example, if this were in Toronto, we would have our field staff come in and check to see that things were installed to the electrical code.

That's a lot of inspections. In fact, I'll call it the machine, just keep that in your mind. The machine. We do half a million transactions in the machine every year that phone into our customer service center and

we roll a vehicle out and we go and inspect and we certify that that's done. It goes back there, it gets approved and all that of stuff.

That's a pretty big machine that we run. Yeah, that's probably enough for that part. Okay. So, I'm going to tell you about our harms reduction journey. We're not going to go through all of these segments. There are two at the bottom, G and H, which I do sort of different discussions for groups or sometimes group wants to...some groups want to talk specifically about what did you do around employee engagement, or stakeholder engagement, or risk-based oversight.

The work we're doing there gets very detailed and we're not going to go through that today, but there are some other modules. What we are going to go through is how we adopted a harms reduction approach, the steps that we took to actually putting it into action. So, it's one thing to think about it and understand it, but how do you actually action it? And this is what I talk to when I go to the Harvard Kennedy School. So, professor Sparrow talks to the theory.

He is an academic and understands that. He was originally a practitioner. I'm not a professor, I'm a practitioner. I have to deal with the issues I deal with in putting this type of a program in place. And then we'll summarize our results and then talk about our second phase.

So, we went through our first phase, now we're in our second phase and what some of the challenges have been along the late with that. So, the Electrical Safety Authority, this is an Ontario-centric description, but it's not uncommon around the globe to have fully-integrated electrical utility. So, large-scale generation plants that might be nuclear, hydro, fossil fuel, whatever that might be, large transmission systems to distribution systems to the small wiring that we would have here.

That whole entire electricity system in Ontario, unlike...or, sorry, they're common to other jurisdictions, was all part of one company. And then there was a big move to deregulate and in around 2000, Ontario Hydro was broken up into its component parts. And one of the component parts that was spun out was this organization called the Electrical Safety Authority.

Now, up until that time, it really was just the machine, just the machine. It was the inspection machine. That's all it really did. It didn't have these other things that I've described that we have today. So, our real journey in the middle circle, was moving from that purely transactional organization to one that had a whole bunch of other regulations and had to just, you know, go through all the things you might imagine setting itself up on its own and having its own staff, its own communication, it's own stakeholder, and its own board of directors, all of those types of growing pains to get started.

And then the last circle is what we've been focused on, which is, okay, we've got all that stuff, those regulations, but how do we become truly a mission-focused organization? Believing in a mission and how do you organize yourself around that? And that's the challenge that we've been working with over the past number of years. And speaking of mission, we changed our mission.

If you had read our mission before, it would have been a very technical description. Something like... I don't recall exactly what it was, but it was something like, you know, "We inspect to make sure that the code is done correctly," you know, something like that, so we make sure that coming to your home

[inaudible], that's what we would do. Not really inspiring from a broader concept. And ours now, you know, it's an Ontario where people can live, work, and play safe from electrical harm, so, much broader.

So, adopting a harms reduction approach. I wish I could tell you that this was such a brilliant idea coming from me, the CEO, when I came to Electrical Safety Authority, but I will share a secret in here and that is, it's not. When I got to the Electrical Safety Authority, we already had a gentleman there and he had been working with Professor Sparrow for a couple of years.

In fact, the one book that...well, he's written several books, but the one book, *The Character of Harms*, if you were to read that and read it carefully enough, you would find a couple of pages dedicated to the Electrical Safety Authority and some of the work we had done around the very early days of the concept of focusing on harms, not necessarily just the regulations.

And what we were able to do to solve a particular issue that we were seeing in our marketplace. Then we started doing some more work with Malcolm Sparrow. In fact, what we did is we actually had him to Toronto. And we had him for two days. And the way we designed that was we brought in a...it was an audience about the size of this room.

So, it included many of our key employee groups, our leaders, our union leaders. We brought in our government representatives. We brought in some of our sister corporations as well and we went through a half-day workshop like this around what does it mean to be a risk-based and to adopt a harms-reduction approach. Excuse me.

And then we narrowed it down in the afternoon to just our own board and staff and then the second day just with our own board of directors. Whole idea there is we wanted to make sure that everybody was on the same page and that I had the endorsement from my board of directors and some of our key leaders in order to move ahead. As you'll learn later, it didn't always work out as smoothly as I've described. So, I'm going to go through about three slides with Malcolm Sparrow's support that really are his theory and then how we've adapted these.

I like this one a lot, it's a little complicated, but it's an important one. And he calls this really the strategic model for a regulatory agency. And think of it as the three components and how the three components have to support each other. If you lose any one of those components, it breaks down.

The model breaks down on you. So let's just walk through those. We can start anywhere, but let's start here. You're constantly assessed as a regulatory organization. Are you actually delivering value? Is the real value that you're perceived, in fact, as delivering? And sometimes what happens is you're not.

Same happens with ESA. We'll talk into example. If those receptacles, we come in and we're inspecting the heck out of those things all the time, electrical contract, really? You're not delivering any value here for me, it's not safety value that you're delivering. And we've seen regulatory organizations where bad things have happened, right?

I think everybody probably knows some of them either indirectly in your sector or in parallel sectors where some bad things have happened and it's not seen as delivering value for the organization. The other one is operational capacity. Now, Malcolm Sparrow would tell you that service excellence does

not get you harm reduction necessarily. So, we run a customer service center, call center if you will, and we have field staff that go out.

We might deliver outstanding service, but they might not be doing the things that actually deliver good value for you. So, you do CPD, you do license renewal, you do all of those things. You still have to do those really well even though they, in its own, do not get you on the upper right-hand box. But you still have to have good, efficient operational capacity to deliver on the commitments that you have for those customers, clients, the obligatees, I guess the regulatory community that you do.

And then there's this other one and we've broken it out a little more, the authorizing environment. You have to constantly maintain the support of your stakeholder groups. And that's where I think these organizations are far more complex than a private sector organization, really. You have a lot of complex. You have governments that you have to keep aligned. You have other stakeholder groups that may be the community that you regulate or it might be the other community that is being protected by the community you regulate.

You have employee groups, you might have unions, you have all kinds of different groups that you have to maintain their support and the media for you to keep operating as an organization. So, these three are always in constant tension. Now, the characteristics of an innovative regulator. I'm always a little sheepish when this slide comes up because, you know, if we were talking to other groups, they would say, "It doesn't look that innovative."

But, maybe it is and maybe it isn't the fact that it's all that innovative, it's just the challenges as we know is, how do you actually do some of these things. So, the approach to being an innovative regulator is really having a problem-solving approach, so thinking, "There's a problem, how do we freshly look at that and how do we start thinking about resources being focused on that particular problem and design different tools to address it?"

And then the second one is how do we invest in different collaborative partnerships? So, a real recognition that we probably cannot solve some of these particular harms by doing it on our own. It might be the work that you're doing here with other regulatory organizations that are in your space or it might be seeking out other organizations that are outside your normal regulatory space, particularly when we get into the human behavioral side, and I'm this more and more within, I will say, the medical regulatory places.

They're looking and seeking, "Why do people do certain things and how can we protect against those harms?" And it is very much outside your normal comfort zone, I would say, of the things that you do within your machine that you run in terms of regulatory processing. And then the last one is a focus on results, so not throughput. Yes, we issued X number of licenses, yes, we had X number of people that we took to discipline, but what is the actual outcome that's taking place for society?

And it's very difficult and uncomfortable sometimes to talk about that and how you measure it, it's very difficult. And the other one is, as an organization, then, how do you set yourself up in order to be able to do that? Well, you have to decide that you're going to bust loose some of your resources. You're going to pull some of those resources from your regular operating machine, let's call, whatever that is, and you're

actually going to focus some resources on it and you're going to use some different tools that you've never used before in order to do that.

And then you're going to find a balance. You can't ignore what you're doing today, right? You can't just say, "Oh, well, we're just going to shift completely away from that." No, no, no, there's all kinds of expectations that you have from governments and your stakeholder group that you have to meet, so you can't just abandon that all of a sudden. But to do some and start moving yourself to a harms focus and then organizing yourself around it. I mean, one of the things that Malcolm Sparrow often says, he challenges.

Sometimes people in the program say, "Oh yeah, we're totally risk-based," and he would say, "Okay, show me on your organizational structure, Linda, show me on your organizational structure who's in charge of harm reduction." Oh, there you go. There's somebody right there. Okay, perfect. Great answer. There you go. I don't know if you just did a quick delegation or what you just did there, but that was very fast.

I can't wait to get to the workshop. This is going to be great. Yeah, but show me in your organizational structure where you have a harm and you actually have people dedicated around that because typically they say, "Oh yeah, we do." And then they look at the org structure and everybody in it, and no, no, no, it's exactly the way you would see in a traditional organization or at least a traditional regulatory authority.

Okay, this one's kind of fun. So, this one we took one of his slides and we just customized it for ourselves. So, in this Venn diagram, on the left-hand side is a circle that is illegal activities from a regulatory perspective in my world and then on the right-hand side are those activities that are not illegal, but they are harmful.

Now, the space in the middle, and I didn't customize this slide for this group, it's been like this for a long time, but you've got wiring installations in a hospital or imagine a propane facility or a long-term care facility, something like that. You know, a mistake gets made there, you've got a vulnerable population and a large population in one spot. You just cannot have that happen as a mistake, so you definitely want to make sure that that is complete, safe installation.

If it's something, a shed or just a telecommunications building that's out in a rural area and something were to happen to that's pretty low-risk. That's not the same. So, the one that's in the center where they overlap, that's the easy stuff because everybody wants to make sure that that happens. Now, if you stay on the left-hand side, for example. Sue, let's say you're having some wiring work done at your home and you get a licensed contractor to come in, you're doing all the right stuff and they're just, you know, putting one extension for a receptacle somewhere in your basement.

That stuff's pretty easy. Now, technically, you're supposed to get a permit and we would have the authority to come and inspect against that permit. Now, if we did that every time, to be honest, I think we'd be seen as some of the complaints you would see here. They would say, "No, no, no, that's...you're being nitpicky. That's unreasonable. You're just having a money grab, like, why are you doing that? That's just not reasonable."

And we don't do that fully today. I mean, we do selective inspection on those. So, those are things that are illegal, but technically, they're just not that risky. Now, on the other side of it is tricky too. So, on the other side, you've got things that are harmful. So, a couple of days after I started, a young boy in Thunder Bay decided, as boys might decide to do, climbed a hydro pole, made contact with the line and it killed him.

Nothing illegal actually took place. The pole was constructed as it was supposed to be constructed. Might we oversee that, the utility did a fine job. They constructed it appropriately. There it is. That's why they put them up high so they're presumably out of harm's way. In this case, it wasn't.

But nothing illegal happened. The other one, and this, sadly, has happened many times as well. In a large commercial-type facility, an electrician's operating a breaker. It's not like the little ones you have at home. These are large. There's a huge amount of current that you're breaking there, in these breakers, that's why they call them.

And it fails and it comes out like a cannon. Usually, it doesn't kill them, but it's a permanently debilitating-type injury. Now, nothing illegal in the sense happened there, but we know those are both really serious harms. Okay? And so, you can decide to stay wherever you want to stay but recognize neither one is very comfortable.

If you're too much on the left or you're too much on the right. And if you're on the right, you'd think everybody would go, "Ah, well that's, of course, that's where you should be." And it's not so easy because you still get complaints, like, "You don't have authority there. Keep your eye on the ball. Whose money is it? You're spending our money doing something that you...that's not the regulation, you service me. Service me." So, it is a very uncomfortable place to be as well on the right-hand side, but that's where we have been moving and shifting to.

Okay, so strategy into action. First thing we did is, when I was saying about a structure, so, Malcolm Sparrow challenged us in terms of, show me in your structure. So we started off, we named, a chief public safety officer. So, up until that time, there was a CEO. I was the boss, right?

Well, this person is a boss in a sense. They have a special role that we carved out, which is to have oversight over, are we, in fact, moving forward on harm reduction? Not necessarily the regulations, but harm reduction. And we appointed our first chief public safety officer. The second thing we did is we knew data was really important and we would need to get data outside of where we traditionally get data, your space.

And so, we hired an epidemiologist that works for us and he helped us with our data as you'll see, a little bit later. So, you know, this was kind of scary space for us to be, to balance, very uncomfortable. But we knew we had to do that. And we actually have pretty good data. I would say this document is typically used around the world. There's folks here from New Zealand and we're chatting with you, we have a very good working relationship there and we share a lot of our data back and forth as well.

And then we said, "Okay, so our data tells us this. Of the harms...ignoring the regulations for a moment, of the harms that are taking place in Ontario and society, and it's pretty much the same around the globe,

they fall into five harms, represent 70% of all the fatalities and critical injuries. So we're going to focus programs on those five harms."

Okay? And we started that off in 2010. Now, this is a little bit of a tricky slide, but let me just pull together. It has all the components that we've been speaking about earlier today. So there's our mission. Our vision as I talked about. Here are four regulations that we have, that I've talked about those four regulations.

Here are five harms that we have, and let's walk through these five harms. Oh, and here is our overall goal, by the way. We set a goal of a outcome goal, 30% reduction in fatalities over five years. Now, how did we come up with 30%? How do you think we came up with 30%, Julie?

No idea? - [Julie] Off the top of our head.

- Off the top of our head. Well, it wasn't too much better than that actually. She's just off the top of your head and it wasn't all that much more sophisticated. Well, what happened was we as a team came up with a 25% reduction. And then what happened? Shirley, what do you think? We came up with 25%.

That's not 30%. How did we get 30%? No idea? Are there any board members here that are on the board? I know we have more people that are executives versus board members. Any board members here? Harry, what do you think?

- [Harry] I think that they set you a more difficult target.

- Yeah, the board set a more difficult target. Boards ever do that to you? Yeah, everybody's nodding. Of course, they do. Yeah, you can move it to...I should have come in with 20% then it would have hit 25% target. It would've been easier. Now, I'm being slightly facetious, but not totally.

And we didn't have perfect science around that. We knew what we wanted to do was to bend the curve down. And there was some reduction taking place, but it was a very minimal amount. We wanted to bend that curve down. And then what we did, and I got to tell you, this was absolutely frightening. I wasn't even sure I had my executive team on side. We decided we were going to set targets in each of those five areas because we knew those were the sub-areas and Malcolm Sparrow will tell you that you can't just set one target without really drilling down till you get enough of a focus that it can be useful.

Okay? So, we called out these harms and we set targets for each one of them. And my team was very scared because we had money on the line for this over that five-year period of time. So, in fact, a couple of people on the team said, "Oh, I don't think we should do that." And part of the rationale was that we can't control...we know we're going to have to work with other partners in order to accomplish this because we don't have all the regulatory authority here?

And that made them very uncomfortable because how can I be accountable for something that I have to work with you and get your cooperation in order for me to accomplish my goal? That's pretty challenging, but we did. And that was, I think, the scariest thing. So, I'll go through those harms. First one, power line safety. Half the fatalities take place with power line safety.

You can imagine the nature of power lines because of the high voltage. It tends to be very unforgiving, so it doesn't tend to leave critical injuries. It tends to be lethal. The second one is high-risk worker, which I described that particular worker working on a breaker, but most often, it's workers that are working live. So, without turning the power off, and they don't have to do that. And so, that was really into the human psychology and you'll see what we did in order to help try to address that one.

The third one is around product safety, so appliances, things that you... so, we're showing a toaster here, which actually is not the most harmful product in your home. What do you suspect is the most harmful product in your home? Anybody? -

[Woman 1] Microwave?

- Someone said microwave? Nope. - [Woman 2] Hairdryer.

- I don't know anything about hairdryer, sorry. No, it's not the hairdryer. What else? - [Woman 3] Electric kettle.

- Electric kettle. Nope.

- Dishwasher.

- Dishwasher, nope.

- Toaster.

- Nope. Not The toaster. Oven. What do you mean by oven? The oven? The stove top? -

[Michelle] The stovetop.

- The whole thing. Stovetop. Who said that? Michelle? Why do you think the stove top?

- There's so many things that go wrong with the gas on [Inaudible].

- Okay. Let me just say a little bit of what Michelle said. One thing I'd say, is you said, "The gas on."

That tends not to actually be harmful very much at all. And people think it is because of it...on gas range, but it's visible, it's visible. You can see the flame. It's actually the coil tops. And it's a particular type of coil top, by the way. So, if you have one that has a glass top... who has a glass top on theirs? Lot of people have glass top.

Yeah, absolutely. But you might somewhere else or you might know other people that have the open coils. And the open coils are very dangerous. And the reason why they're very dangerous is it heats up to, whatever temperature. I don't know what the temperature is, but it's extremely high. It's enough to go over the flash point of cooking oil, and that's what often happens, creates a fire. And then what you do when you got a fire?

Water, and if you ever watch a video and you see water going onto oil, it just... it goes all the way up. It's very, very dangerous. Or they have their arm across and it's clothing. Those two are the most common. It's a very dangerous appliance in your home if you have the open coils. Now, it doesn't happen with the glass top. Why doesn't it happen with glass top?

Oh, because when they first started making the glass top ones, it did happen. The temperature would go really high and then low. That's how that's how the traditional coils go and it would break the glass. Yeah. So, it was esthetic reasons, right? You wouldn't want that happening, Tamara, at your place, would you? We don't want to break the glass.

Yeah, so manufacturers put in a two-dollar part that made it modulate much quicker at more moderate temperature as opposed to the high swings that you got on the other ones, but they didn't change the other ones. So, we decided that we would start off and I'll tell you about what we did in terms of changing the standards. So, that's what was happening with those stoves and that's why it's one of the largest ones that caused fire.

The other one is aging infrastructure, which really is on your home or...this is a new a new facility, so this wouldn't be a good example. But a very aged infrastructure like an apartment building. There was an apartment building in Toronto the other day, at that time when it was built back in, you know, the 60s, they didn't have grounding and I won't explain that to you from a technical standpoint, but you can imagine. There's an in power line, you'd say, and a neutral coming out and the neutral line, as long as those are still connected, you don't need the grounding, that's fine, but the neutral had a fault in it and started a fire all through that apartment building.

Fifteen hundred people displaced. Thankfully, not one critical injury or fatality in it, but it certainly could have been. And that's aging infrastructure type challenges that are out there. Older infrastructure. Now, we have no authority over that. We can't just knock on that apartment and say, "Hey, you're in an apartment that was built in 1960. We're coming in. You know what? We're coming in to check that out because we think there's likely a problem there." No, no, no.

Now, if they build a new apartment right beside it, we can be all over that, but not this one. So, in each one of these, we actually have very little regulatory authority as you would see. Now, the last one is kind of interesting too. It's number five, new wiring. But guess how many critical injuries or fatalities we have had with new wiring. Right.

None. None in the last decade. So, why is it up there as a number five. Well, our big machine, that's what it does. I does all the new wiring inspections. That's where we clearly have regulatory authority and we, I would say, overprotect against that harm. It used to be a much more difficult harm, but now the wiring techniques, the qualifications, all these different things, the products that we have today, are so sophisticated that that risk has come down substantially, but we still have our big machine going out and doing all of that inspection activity.

Now, we still need some of that, agree? But if you look at it, you'd say, "Ah, now I'm getting it, David. You've got to shift some of your resources from your big processing components and your licensing renewals and your CPD and start to focus some of it on these other areas and do it in

partnership with other organizations and you're on the hook for a 30% reduction over five years." So, you can start to feel my pressure as the CEO of this organization at the time.

So here's one of the things we started to do. The first was we mapped out the entire system. We said, "Okay, who are the other players that are in the system that might be able to help us?" So, you've got the whole electricity distribution piece. We've got the electrical workers themselves and they have safety associations. We've got our electric utilities, could maybe help us with some of the power line activities.

We've got the product manufacturers as well. And then an interesting one particularly with this audience, well, codes and standards, those sorts of things that we can change and that'll be important when we get to the stove top thing, but also healthcare workers. We recognize that sometimes things will happen and there will be electrical injuries and we know, from research, that it's very debilitating.

Even if physical characteristics may have healed, they have long time health concerns that happen and you'd know that much better than me. So, we started working with Sunnybrook burn unit in Toronto and established an electrical research chair to better understand electrical burns, the nature of them, and how to recover from those electrical burns because we looked at it as an entire system, not just our responsibilities directly.

And here are some of the things we did. So, the one on the upper right-hand... sorry, upper left-hand side is an app. This is to address electrical workers working in large commercial and industrial facilities. This app, they have to do a little work ahead of time that we help them with. They go in and they put a QR code on all the major components of the electrical system so they know how much fault current is there.

They know if they're going to operate that breaker and the breaker fails, how much of a fault current could come at them and what personal protective equipment they would have. It also tells them what qualifications they must have to have and where the disconnects are and so on. We found that in about 85% of the cases, if they use that, they eliminated the possibility of an injury. That app became much larger than us. We're not really in the app building business and we're not a for-profit organization and so companies like Honeywell adopted that internationally across all their facilities.

In fact, they won an award within the company for innovation and using that app. Well, we're not an international organization, so what we did at a certain point in time, is we sold that. And it's allowed that app to further expand to others because that's not really our thing. So, we started off, built it sold it, which is perfectly fine, all of us. Then the other one that we did at the same time is why do men take risks. We did some research with one of the universities around why is it...and it is men because there's only 3% women in the trade, and so it's predominantly men.

And oh, and guess what age by the way? We'll begin to understand? Older, younger?

- Younger.

- Younger. And that's what everybody says, and you're wrong. You're wrong. It's the older. They become more complacent because they've done it 100,000 times or whatever, and so they're, "Whatever."

Nothing could go wrong." It's actually the older ones that are more at risk. And so, we're trying to get into the human psychology of why this takes place.

And that's a very uncomfortable...if you think about us as a machine regulator doing inspections now getting into the human psychology of why people do certain things and I'm sure you're starting to think, "Oh yeah, that happens in your space all the time." And I know organizations like yours are reaching out and understanding the human psychology of why these things take place. Then there's just a little ad here. I can't get them all on.

On the right-hand side, which was working with the local distribution utilities, the electric companies, to do combined coordinated power line safety campaigns. These have become so successful, we actually licensed it, not for profit because we don't...again, we're not looking for dollars, but with our friends in Queensland. And they're using those same materials with their branding on them now.

So, that's another good example of an international cooperation like you're doing in order of sharing best practices and those types of advertising materials. Then there's others around hiring a licensed electrical contractor, not doing the work yourself. And then we started up a program called ElecCheck and we haven't had the greatest results yet. I think we've got to do some refinement. Right now we're trying to do too much of it on our own and I think we need another partner to do this.

But it would be to come to your home, Kate. We would offer the service. Let's say you have an older home, pre-1973. That's when there was quite a change in standards. We would offer... we would come into your home and do an inspection of all your existing wiring, so getting at the older aging home wiring. And we have a program that we do for commercial properties as well and it's having some effect.

The stovetops. Three weeks ago, we just had our annual general meeting and awards, so part of our program as well is not just to work with stakeholders but recognize them for their achievements. And we had a joint working group with the fire department, with...it's not fire department, Fire Marshal's Office, I should say, of Ontario that was working across North America with our U.S. counterparts to change the standard on those stoves.

And we actually have, after a decade, changed the standard on those stoves. You can have a coil top that's exposed, but it modulates, it doesn't get up to those extreme temperatures anymore. But it took that long. That's a lot of perseverance. So those are some of the things we did. And here's our five-year results. So this took us up to about 2015.

We decreased the number of fatalities by 37% over that period of time. Certainly, well past what we had said in terms of our target, which is strange for boards by the way because then board's like, "Oh, we didn't set that target and I feel..." Yeah, Harry's nodding. You know, if you're the CEO, you know how this goes. It's like they don't go, "Wow, what an accomplishment."

It's like, "Oh, I guess we didn't set that target. That was too easy.Right? It's too easy. It's too easy, clearly." Powerline contacts down 28%. Workers killed or critically injured, 48%. Electrical product fires, 36% and fires by aging electrical infrastructure, it is still by far the most difficult to get at because you've got to think about all the properties that are out there, what's happened to them over all that period of time.

That's something we really have a lot of work still to do. But we're extremely pleased in terms of how far we got. Now, this is a picture of my mountain bike. This is what I like to do in my leisure time. I like to go mountain biking. This is at Albion hills, which is just north of Toronto. And I like this.

I stopped one night and took a picture of the sign because it kind of reminded me of the two paths, you know, there's the hard and the easy. And if you go on the hard side of this, yeah, there's a lot of bumps and rocks. Every single time I can do it, but it's taken me a long time to be able to do it. And every time I kind of take a deep breath and I go down that rocky side to go down. And it's very rewarding, but it's also a little scary at the same time.

And it always makes me think about going on a journey like this, is it's always felt a bit uncomfortable. There's just...it just is. Now, Malcolm Sparrow calls it bungee cords. I don't know if that's the term I would use, but can we say challenges along the way. So it's, you know, I can stand up here and you're, "Oh, wow, David, this was all really easy,"but very difficult. And we made a lot of mistakes. One of the mistakes that we made was around employee engagement.

I just thought our 500 employees would naturally see the brilliance of this strategy. And I told them once so, they would get it. Obviously, being slightly facetious, we did more than that, but not enough because they saw value in what they did and the way they had been doing it for a hundred years.

And so, to come along and all of a sudden and say, "Well, we're going to do a little less of that inspection." No, no, no, because they have found the odd time. Even in those low-risk ones, they find some things that aren't right. And so, to say, "We're not going to look at all of that," that makes them very uncomfortable. They would say, "That's not our business, the things that you're pointing us to. We've got no business with stovetops. We do electrical wiring inspection." So, getting the culture change, very, very difficult.

We'll talk a little bit more about it as well. Some of our other sister organizations kind of thought, "Hey, you guys are in our space. That's not your business. You're in our space." Government was actually pretty good, very supportive, but I have to say if we'd had a major incident along the way, you know, governments swing like a pendulum sometimes as you know, and they can react very quickly. And they might have said, "Hey, what are you guys doing over there?"

So, lots of challenges and we can chat about those when we either do the workshop or leave time for just a couple of questions at the end. Okay. So, let me talk about phase two. Here, we really said, "Okay, now what can we do? What can we do to go further?" In the second phase, we set a safety objective as well. A 20% reduction...you might say, "Ha, you got a lower target," but it's actually a much bigger number.

20% reduction in critical injuries and fatalities. In the critical injuries, because we had hired our epidemiologist, he was able to get us the data from emergency room visits so we actually had all accurate data which we'd never had before, now to understand how critical injuries are taking place and that gave us a little different insight into how we would develop programs.

The second, it sounds like we're doing more regulation, but it's actually to increase those working outside the safety system. We know it's a huge underground economy and people go, "Hey, my uncle, Bob, you know, he seems to be pretty handy." And we'll get Bob to come in and do some electrical work at our place and we'll just pay him some cash and things like that. Then you get poor installation, so we want to find ways of bringing that work inside the system.

Then the third one was just maintaining... that goes back to that spiral triangle, maintaining our public accountability and doing survey work on how are we discharging that? Are we seen to be... it's not a customer service measure, right? Because when you're putting obligations on people, that isn't what it's about, but are we seen to be fair and reasonable in discharging our responsibilities? Now, this is kind of a neat...this is not my drawing or my kids' drawings or anything like that.

We recognize that we made a big mistake on employee engagement the first go around. So we had to go back and really regroup here. And this is one slide from a whole big plan we put together around getting alignment across the organization. This happens to be from a day-and-a-half workshop where we brought in 150 of our 500 employees for a day and a half and worked them through so that they got comfortable and they participated fully in developing our harm reduction 2.0 strategy.

And you'll see a bunch of things in here. You can't quite see it, but there's comments in here like partnership with the unions, continuous learning, new processes, open conversations, different things. It's more than just inspection. You see some of the language coming out that we've talked about. Very, very successful.

Then we set up a...I actually took my HR VP, split it into two rolls and had one strictly on alignment, leadership development, culture change in order to really have that focus on that in the organization. That was a big decision as well, was quite important for us. Now, I'll give you a little bit of history. So, probably like your organizations, you sometimes benchmark yourselves on employee engagement and we were the organization that was so low, you wanted us in your competitor group.

You know what I'm saying? Yeah. Because we were bottom decile. If I'd started this chart even further, you would have seen it was always in the bottom decile. It wasn't...at first, I took it personally when I got there because the first year I got there was 2010, so pretty abysmal. But it had been like that for quite some time through two other CEOs as I found out. So we were in the bottom decile in terms of engagement.

And this benchmarks as to our peer group. And I've pulled out three particular measures that we found are the most impactful for us that we've tracked through this. And they almost follow the red dots, almost exactly followed the same pattern, slight variations, but very, very close. And that was alignment to strategy. So, we all agreed that this is the right strategy, a harm-reduction approach.

Number two was a culture of teamwork working together internally and externally toward that goal. And then the third one was support for the executive leadership, which is kind of important to me, as you might imagine. But it's really, it's, you know, do we, feel we have got the right leadership and the right leadership direction? And you can see over a time after these extreme efforts, we had to regroup. You'll see how we made progress to go to the upper quartile where we're at today as well.

I could show you, and I don't have in this slide deck, we could talk about it when we get into the workshop piece, what we did around stakeholder engagement as well because it's fairly significant efforts there as well. Now, where are we at? Well, we're three years into our second harm reduction strategy. Twenty percent goal over five years. So those of you that are really fast with math, how much per year?

Right. Four percent per year would be sort of on average. So, you would think after three years, if we're on target, which should be around 12% reduction, we're at 12.6. So, I would say we're ahead. But that rotten epidemiologist, he has a slightly different curve. It's not... I'm going to count it, I have a straight line curve, a straight line, but, you know, he's got a curve.

And he says that we're slightly behind. It should be 12.8 or something like that. But anyway, I'm the CEO so I get to say that we're on track. But with those continued efforts, we are still seeing very significant reductions in critical injuries and fatalities in that period of time. Now, we've got a couple more topics before we wrap up here for our morning piece.

This, literally, was drawn on the back of a napkin. You know, someone always says something was drawn on the back of the napkin, this was drawn on the back of a napkin and we've got a very sophisticated version of this with nice graphics that a company did for us. I actually really like this one. Our chief operating officer drew it out. And this is, we're going back now and recognizing all the components we built on on a harm-reduction strategy.

We left the big machine alone. We didn't touch it. Too afraid to touch the machine, really. A lot of things built in there. We knew at some point in time we'd have to go back and do that. Now, with the culture change and work that we've done, we're confident enough in the last year and half, we've gone back, and we're transforming the machine. We're still a year and a half out from implementation, but here's what we're doing.

So now, every transaction that comes in, it goes through, we call it the machine learning. These are nine different attributes, the location, the type of work that's being done, who's doing the work, and so on. It assesses all of those work. It gets risk ranked in a model, and then it ranks them in terms of high, medium, or low.

And we've decided that if it's a high risk, we're going to go for sure. If it's medium, we will do a selective component or they can decide to go or not go. And then the low risk, basically, as we'd go, one in 10 or one in 20 would have some ratio just enough so that they know that we would be coming, but really very light-handed for that low risk.

And if you do go more times for the low risk, you'd actually have to explain to us why you did that. And then the visit takes place and then we find out what actually was there at the visit. So, there's learning taking place. That goes back into the machine learning and we find, "Oh that attribute's not quite right." And we adjust those attributes.

And so, we're in the process now. We've tested this out on a more manual basis and then we're just starting to automate some of the computer design. So, this is our new risk-based oversight to go back and tackle the machine. And the idea with that is that we can still utilize about the same amount of

resources. We've made an agreement with the union that we're not getting rid of anybody, but we're also not going to keep expanding as an organization.

We're going to work within the resource envelope that we basically have and it'll allow us to do this. So, this chart shows what we do today on the left-hand side. We inspect a lot of low and medium-risk work. You can see in the chart it sits very high. I don't know what the number is there, but well, 90% of low-risk, we still are inspecting today. Not everything, but low and the inspectors are more or less deciding.

And what we want to get to eventually is what's on the right-hand side. Now, that's a theoretical maximum. We'll never get to that because there's some things...actually a new home, the risk is relatively low, but we are going to inspect each new home. We just feel there's a public policy benefit for us to say that, you know, "Ruby, you purchased a home, you want to make sure that we came in, we had eyes on it at least once in that process."

And what we'd like to do with that additional resource is to go further with our harm reduction because what we see happening is that there's all that aging infrastructure that we can't get to. We want to get to that. Plus, in our world, if you're familiar with the electricity sector, it is going through a massive disruption in terms of technological change. Electric vehicles, microgrids, solar technology is becoming so effective.

It's grid-compatible. Battery storage is coming together in complex ways that we've never seen before. We need to be very proactive in getting ahead of all of those changes, and if we just keep inspecting and doing all the regular stuff, we won't have the resources in order for us to do that. Okay. So, very last concept. This is one we're actually just trying out with our board.

And when I head back this week to Toronto, we'll be doing a board strategy session. And so, I'll get a chance to test this out on you. So, as I said, this is kind of our world. You see the technology disruption that's taking place here. On one hand, we've got this balance where if something goes wrong, governments and society expect legislation right away. That happens in your space and we're seeing that globally as well, right?

Something bad happens, they move to regulation. Regulation or legislation and yet, we're also seeing government say we expect less regulatory burden from you as organizations as well. Amazon. Put that in there because there's an expectation even though you're a regulator, that you respond in a way that is Amazon-like, you know, 24/7, very fast service as well. So, there's something called a product life cycle for those of you that were in the marketing side of things.

This is the typical product life cycle. You introduce a product, it grows, it gets to a maturity point, you know, either reinvent it like new tide or something like that, and then it falls off or whatever. It actually isn't right, there is a previous one. You wouldn't just start a product, you do more market research or something like that ahead of time. And what we're thinking in our world then is identifying what about a harm cycle? There's a discovery, something new comes along, we go, "Hoo, is that a harm or is that not a harm?"

We had smart meters come in and we didn't know whether smart meters were a harm or weren't a harm, and it turns out there was one type of a smart meter which has a remote disconnect. So what we can do

is we can disconnect your home, Michelle, with this particular meter, our utility can. And they can do it remotely. And why would they want to do that, by the way?

- Not paying the bill.

- I think she said not paying the bill. Yes, that is correct. That's usually...the utilities put these on for not paying the bill. Anyway, in this one particular type of meter, it started a fire. Oh, what happened was they redesigned it because originally it was bigger and then it was very conspicuous. People didn't like that because you're putting it on someone's home and you were identifying them as someone that didn't pay their bill because it had a bigger meter on there.

So, the utilities complained, the manufacturer went back and built it smaller in and it was so close together that it would sometimes short and it would cause a fire. So, we identified the harm, we pulled those meters out, we took action against that, and then now it's gone back into monitoring mode. So, the harm went through a very quick cycle in that case. So, we're thinking about it from like a whole portfolio of harms. Think of all the harms that could take place.

Some are long, some are short, but they all go through these various stages and we need to decide at each stage, do we put more resources against it or do we stop resources against that particular harm? So, at that, I'm going to stop. Speaking of stopping, I'm going to stop. We've just got about five or six minutes left. We'll take a couple of questions, if there's questions on clarification, then we'll have the break and then we'll do... I'll put you guys to work in the workshop.

But any questions maybe you'd like to ask? - [Woman] Hi. I just have a question, and I guess this is more of an ethical one and I wonder how you explored that, and especially in our world in health, there's no way you can 100% decreased critical incidents, but picking 20 so you actually have a number that 13 still died.

How did you explore that amongst your board, and how did you engage your staff on that, and government, and all those stakeholders? Because that's still a real person out there and just wondering how that dialog occurred.

- Well, thank you for that question. I think you should come back to Toronto with me and talk to my board of directors in the next couple of days because I think that's the question that they will be asking. So, now we're starting to think about our...in my term at ESA, our third strategy. It will not be completely different, it will build on what we're doing and getting more refined.

But in terms of fatalities, we just look at fatalities. And we considered an industry that was really, really safe. You would consider the airline industries. At one fatality per million on how they count the million, I guess flights or whatever that happens to be, that is considered absolutely top safe. We are at now less than one per million.

It's at 0.8 per million. So, you almost start to ask yourself how much further can you go? And we were having this debate with the executive team, and let alone with our board of directors, to say, "Have we reached the asymptote of that curve?" And then you think, "Well, that doesn't seem acceptable." And

because we also know that critical injuries can be just as debilitating, well, no, it's not fatal, but it can be quite debilitating for a lifetime.

And there we know there are many more. There are several hundred per year. We still feel there's lots more to go. In terms of...our ultimate goal is, as you saw in our mission, our ultimate goal is 100%. We don't know if that's even theoretically possible, but that's where we're still focused. So, we will set more targets, again, quite likely in that direction.

I know it doesn't totally answer it, because, you know, 50% is better than 30% and it is, it's just what could we possibly get done in that period of time? So, thank you. David? - [David] First of all, I've really enjoyed the presentation. And this is kind of gross simplification, but the journey that you've been on has kind of moved from a focus on product to a focus on systems.

The parallel journey that we need to pursue is a move from a focus on individual to a focus on wider systems as well. What advice have you got for us in relation to that journey?

- Sure. Well, I don't think I'm smart enough to really give you advice, but I've been at so many different speaking opportunities with groups like yours that are in the broader healthcare space. And the advice that I've seen being shared amongst all of them is to really think about the things that you're doing, like, CPD is good.

You're doing CPD, that's good, but don't expect CPD is necessarily going to resolve many of those more difficult issues that you have. You deliver excellent service, I'm sure, in your licensing processing, so the education part, processing licenses, renewals, all those sorts of things in your disciplinary committees. But that itself will not necessarily get you the better outcomes.

I've seen organizations like your own think a lot about the human psychology of those bad things that sometimes happen within our profession and how can we reach out in advance. I actually had a slide in here, somewhat mockingly. I didn't bother pulling it up, but, you know, *The Minority Report* movie which some people have seen and, you know, trying to predict in advance who are in vulnerable...who amongst your profession are in vulnerable situations that might do something that you would like to avoid them doing which we've sadly have seen.

So, that's the only advice I would reflect back, David, is what I've seen through other organizations and where they're trying to put their focus and think about your machine, whatever your machine is, just getting 2%, 3%, 5% of that resource away from there. Getting it into focus in these other areas and start learning about them.

And I know you are, so I don't need to say that you're not. I know you are because I've spoken to many of your organizations and others. Okay. Maybe time for just maybe one last question and I've seen my clock's up. - [Phyllis] Thank you.

Phyllis Mitchell from Vermont. Just a couple of comments. I worked in risk as a risk manager for a 300-bed hospital for about 4 years. So we're always looking at how do we get in front of the risk and anticipate the risk. And I think my comment is that when you talked about moving the bar from focusing

on the illegal to focusing on the harmful and how that impacts me as a regulator in the state of Vermont with the people that we regulate and we enforce.

So, that was my first comment. So, thank you for that. And I appreciate your presentation. And then your harm reduction life cycle. How do we move that? How do we decrease our risk? Our mandate is public safety, so how do we look at that and decrease that as an organization?

So, just my thoughts. Thank you.

- Well, you're welcome. Thank you. Well, with that, I think I've used up all my time, so I think we're at break time. Thank you very much. That was really enjoyable. Thank you.