

# ***Modification Of Radioactive Waste Storage Facilities***

## ***And***

### ***Refurbishment of Gentilly-2 Nuclear Power Plant***

Good evening Mr. Chairman, Commission members, ladies and gentlemen.

My name is Lloyd Jones and I am a Canadian citizen born in New Brunswick and currently living in the Province of Ontario. I am a graduate engineer holding a Bachelor of Science degree from the University of New Brunswick. I have worked my entire professional career, 31 years and counting, in the Canadian nuclear industry. I am the President of a company called Zircatec Precision Industries Inc. which is a manufacturer of CANDU nuclear fuel and components used in the construction of CANDU nuclear reactors. Zircatec is a supplier of nuclear fuel to the Hydro Quebec Gentilly-2 nuclear power station.

My interest in this project is two-fold. One, my company is a supplier to the Gentilly-2 power station and of course I would like to see it continue to operate. However, beyond that, I am concerned about the challenge we collectively face of protecting our natural environment while at the same time being able to generate the electrical energy that is essential to sustain our modern society.

I'm sure others have talked to you about the significant economic advantages that the Gentilly-2 nuclear power plant has brought to the region and so, as important as it is, I'm not going to dwell on that. I am not going to give you a bunch of facts and figures which I am sure would just be a repeat of what you have already heard and therefore a waste of your time. I want to talk to you as a fellow citizen of Canada and a fellow citizen of the world about the concerns we all share about the future that our children and grandchildren will be inherit from us.

Abundant and reliable supply of electricity is absolutely essential to the existence of our modern society. However, while we must generate electricity, we must also protect our environment now and for future generations. Although nuclear has a lot to offer us because it can generate large amounts of electricity safely and reliably with very little impact on our environment, it is not a magic solution to all of our problems. In fact, there is no one magic solution. We are going to need electricity from all sources. We need fossil, we need renewables, we need conservation and we need nuclear. It seems to be popular belief that wind and solar will be our salvation. As attractive and romantic as this might sound; gentle breezes and warm sun providing pollution free electricity, the reality is that, although they may be environmentally friendly, they are not base load generation. The wind doesn't always blow and the sun doesn't always shine and when that happens you must have another source of generation that you can turn to or the lights will go out. For every megawatt of wind or solar generation you build, you must also build another source of supply that is not wind or solar for the times when they are not available. Wind generation in most locations is, by the way, unavailable most of the time. So we need electricity from all sources. You can't take any advantage of the benefits energy

supplied by the wind and the sun when it is available unless you have generation capability from another source, such as nuclear, to back it up.

Fortunately, we do have many ways of making electricity available to us today. However, they all have environmental impacts. Let's face it, everything we do has environmental impacts. Every person, by just living each day, creates pollution. Who among us has not sent some garbage to a landfill site. It is a matter of degree. Our challenge is to find ways of doing things, such as generating electricity, with minimum impact on our environment. This is where nuclear really shines. Relative to other forms of base load electricity generation, nuclear has much less impact on our environment.

An electricity supply system can only be stable and reliable if it has a sizeable base load component; a component that does not rely on the wind to blow, the sun to shine or the rain to fall. A component that can be turned on and off at will without relying on the cooperation of Mother Nature. Nuclear is one form of base load electricity generation available to us. But unlike other forms of base load generation, it does not emit the gases that create smog and acid rain and global warming the way burning fossil fuels does.

Nuclear does create waste. The popular opinion seems to be that nuclear waste is the biggest concern about nuclear power. However, the reality is that the waste is the very best part of the nuclear story. Unlike, other forms of base load generation, we know exactly where the nuclear wastes are and we have them safely contained. They are not thrown up a stack and spread far and wide for people to breathe in and to pollute our lakes and our land and to worsen our Global Warming problems. Not only do we know where the nuclear wastes are, we know how to handle them safely without negative impact on the environment or people. This has been well demonstrated at all of the CANDU reactor sites but nowhere has it been better demonstrated than right here in Quebec at the Gentilly-2 site. The nuclear fuel waste handling and storage system used by Hydro Quebec is second to none. It is safe and it is secure.

By the way, I have had the pleasure in my career to visit a lot of nuclear facilities and among them some of the best nuclear facilities in the world. I have to tell you, the Gentilly-2 facility takes a back seat to none. It is one of the best run nuclear plants in the world. It is run well and it is run safely by experienced and competent professionals. You should be proud of their accomplishments.

Nuclear is the only proven source of baseload electricity generation available to us that does not produce significant Global Warming gases. Canada will not be able to meet its Kyoto commitments without nuclear. For Canada, nuclear is not the only solution to Global Warming but without nuclear there is no solution.

Looking to the future, hydrogen is often touted as being the solution to our problems. You hear a lot of talk about the hydrogen economy and fuel cells for cars. The reality is, hydrogen is not an energy source. Hydrogen is really an energy storage medium. You can't drill a hole in the ground and get hydrogen like you do natural gas. You have to make hydrogen and it takes energy to do this. One of the best ways to make hydrogen is by using electricity to crack water and separate the hydrogen and oxygen in the H<sub>2</sub>O. You can think of it in this way. Making

hydrogen using electricity is an alternative to batteries as a way of storing electricity. When hydrogen is used in a fuel cell to generate electricity it does it in a way that is pollution and greenhouse gas free. However, it makes no sense to produce hydrogen using electricity generated from fossil fuels that generate pollutants and global warming gases. There may not be any pollutants generated in powering a car with a hydrogen fuel cell but all you've really done is transfer the point of generation of the pollutants. Instead of the car generating the pollution, the electricity generation station does it if it uses fossil fuels. Nothing has been gained. However, if you generate the electricity with nuclear, you avoid the air pollutants and global warming gasses entirely. If Quebec is to play any significant role in the future hydrogen economy, you need to have a reliable source of electricity that does not produce air pollution or global warming gases. New hydro generation is not infinitely available and so you need to keep the nuclear option open.

This is the primary thought I want to leave you with. We need to keep all of our electricity generation options open. Hydro Quebec has developed a nuclear capability that is second to none in the world. If you lose it now, it is unlikely you will ever get it back. The nuclear option will be gone for you. This will not be good news for the future generations that are depending on us to make the right decisions for them now. My experience is that it is never wise to close the door on an option you need now and will probably need even more in the future.

Nuclear power can generate large amounts of electricity safely, cleanly, reliably and at competitive cost. This is not theory, this is proven by more than 20 years of safe and reliable operation of the Gentill-2 reactor. I implore you to approve the proposal before you so that you can continue to use nuclear power to your advantage today and, at the same time, keep it available as an option for future generations.

Thank you for allowing me the time to speak to you today. I will attempt to answer any questions you may have.

Lloyd R. Jones  
President  
Zircotec Precision Industries Inc.