

SUSTAINABLE DEVELOPMENT

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Good morning and welcome to the 29th Annual Canadian Nuclear Society conference. I am pleased to be Honorary Chair of this key Canadian Nuclear industry event.

First of all let me take a moment to recognize and thanks the sponsors of this event, as it is through their thoughtfulness and generosity that we are able to hold these events.

I would like to mention that the annual W.B. Lewis Lecture will be held in conjunction with the Conference, at the luncheon today. The speaker this year is Dr Eddy Isaacs of the Alberta Energy Research Institute, speaking on "Nuclear in the Oil sands". Also, I should mention that the Annual CNA/CNS Awards Banquet will take place in conjunction with the Conference, on Tuesday evening, which will be preceded by a cocktail reception.

The theme of this conference is "Nuclear Sustainability".

The encyclopedia definition of "Sustainable Development" is: *a resource use that meets human needs in the present, while preserving the environment, and the future as well.* The Brundtland Commission describes "Sustainable Development" as *"...development that meets the needs of the present without compromising the ability of future generations to meet their own needs."* In the nuclear industry, it is *energy for people today while not interfering with future generations' ability to enjoy the same environment without any legacy of burdens from the present method of generating it.* In a broad sense, sustainable development incorporates Three (3) key dimensions:

- Economic Growth,
- Environmental Protection
- Social Welfare.

The challenge for sustainable development policies is to address these three dimensions in a balanced way.

Economic Growth

This means not only the provision to National Industry and Business a reliable and economic form of energy, but the sustainability of the Canadian Nuclear Industry. As

each New or Rebuilt Reactor adds about 3 Billion Dollars per 1000 MW to the Canadian GDP. With a significant amount local to this Province.

Environmental Protection

Nuclear Generation has no greenhouse gases, noxious emissions (SOx and NOx) or large volumes of solid waste. Instead, there is a relatively small amount of Spent Fuel that is stored on site and in future in a main repository.

I will speak more about this in a moment.

Social Welfare

The communities with Nuclear Plants receive a noticeable impact on the local economy, low unemployment, funding for better education facilities and infrastructure, as well as a better quality of life.

I would like to reiterate what I said last night about the high attendance and number of new generation members attending. This shows the Renaissance in the Nuclear Industry is real. We are seeing young professionals joining the industry committed to developing their careers in Nuclear Power Generation. At SNC-Lavalin Nuclear for example we have seen the average age of our staff go from 52 years of age to under 45 in five years. There was also a recent time when our staff count was going down. What happened? The planet woke up and acknowledged that over 20% of the world's power consumption is nuclear and cannot be effectively replaced by any other source! This means Major refurbishments and New Builds are required now!

What does it mean to companies like us? It means there is a long-term future for the nuclear industry and its products and suppliers; this is another definition of sustainability. We have been investing and developing new High End Services that have transformed into Intellectual Property. These services are being exported to the International Market and the export of services is another way to maintain sustainability in the industry. The development of these products is the Canadian Way of staying ahead of our Competitors, ahead of the curve and being Sustainable. Take for example AECL's Retube Methodology. First used at Bruce, then at Point Lepreau and eventually at Wolsong and Gentilly. This is an example of the continuous improvements that AECL is making to ensure predictable results while staying competitive in the market. I believe that for a Sustainable Nuclear Industry in Canada, we must have a pool of Domestic Advanced Intellectual Property in all Canadian Companies to ensure our future.

I believe that Nuclear Energy is well on its way to being a sustainable development type of Industry.

With an approach of transferring a large range of assets to future generations, as well as minimizing environmental impacts and burdens, which is the fundamental goal of sustainable development.

Existing nuclear power plants are economically competitive and perform well in deregulated electricity markets. The economic impact of a new nuclear power plant within existing communities is huge. Nuclear power has already absorbed a large part of its future costs, such as the decommissioning of the plant at the end of its life and the management and disposal of the waste produced. Such a claim cannot be made by fossil fuel technologies, which emit waste into the environment.

Nuclear energy also has a low impact on health and the environment, and with its efforts to contribute to sustainable development goals, nuclear energy will continue to maintain its high standards of safety compared to any other industry.

Part of this sustainability will be related to the handling of radioactive waste and implementing the solution that has been developed by the Nuclear Waste Management Organization. This is a technically safe method, based on four stages:

- deep geological disposal in the Canadian Shield,
- Centralized storage either above or below ground,
- storage at nuclear reactor sites
- an adaptive phased management approach.

There has been already \$1.4 billion in funding put aside for this methodology and it is growing every month. Currently we are in the Stage of evaluating sites for the future Deep Geological Repositories. The Process that the NWMO has put in place has a sound path forward, a developed Methodology and a Transparent Implementation Process. However, there is no technical urgency to implement long-term waste repositories, as a substantive portion of the spent fuel can be recovered for further use. Also CANDU units can utilize the spent fuel from light water reactors; the ratio is 1 CANDU to three or four light water reactors, which is considered a good ratio for complete fuel utilization. And we'll be hearing more about these options for the back-end of the cycle during the conference. However, it is important to construct and commission these facilities to demonstrate that these goals for sustainable development can be achieved and shown to be real and functional.

In order to continue to meet Sustainable Development goals, nuclear energy will have to have to develop or maintain (depending when the question is asked) a high level of social acceptance. A recent article published in The Winnipeg Sun provided a Nanos Research-Sun Media survey found that more than half of Canadians (52.5%) support or somewhat support the building of more nuclear plants in Canada to reduce reliance on fossil-fuel burning plants. The timing of the survey was just in time for this conference! Governments, utilities, the media and all of you will be required to help the public understand the social, ethical and political issues related to Nuclear Energy and to put them into perspective against the issues inherent in alternative energy sources. Only then can we create a decision-making environment consistent with the goals of sustainable development. This is important as there are currently more than 400 reactors operating worldwide.

Our role within the Nuclear Industry will be to provide technical solutions that are safe and economical, to ensure that plants continue to be operated safely and without incident and to deliver on our promises of safe, economical, reliable and environmentally sustainable Nuclear Generation. This will go a long way towards earning social acceptance from our society.

It is up to us to seize the moment and do our part, and for our new generation of CNS members to grab the torch and move the Canadian Nuclear Industry forward in Canada as well as Internationally.

I hope that this conference is beneficial as well as enjoyable for all of you and that the conference will be even bigger next year.

I will now turn the Podium over to Dr Ian Hastings to begin the first Plenary session of the conference.