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Good afternoon ladies and gentlemen. I want to thank our hosts "The Chinese Nuclear Society" for welcoming us so warmly to the International Conference on Nuclear engineering.

Such a gathering of nuclear experts is particularly appropriate and timely. As others have observed, this is an amazing time for the nuclear industry worldwide. Many countries represented here today are at various stages of renewing their commitment to nuclear power. As we know, China is moving ahead rapidly with their nuclear program and is committed to new build projects. We are very proud to be participating with China on their nuclear program. The Qinshan Phase III project, which was just recently completed, is by far the largest cooperative project between Canada and China to date. Working with our Chinese partners, the first CANDU 6 began commercial operation 43 days ahead of schedule, the second unit was 4 months ahead of schedule, and the entire project was completed 10% below budget.

We look forward to continuing to cooperate with China on nuclear technology. Considerable technology transfer has taken place during the Qinshan Phase III project. Replication of the two existing plants would result in 100% transfer of the CANDU 6 technology to China. In the development area, the Chinese and Canadian governments have just signed a nuclear cooperation agreement including joint work on advanced reactor technology, advanced fuel cycles, nuclear applications such as hydrogen

production, and R&D. We will be working closely with various Chinese organizations and universities on these important topics.

I now would like to say a few words about our vision for the future. I am pleased to say that Canada is renewing its commitment to nuclear power. Canada is fortunate to have a wide mix of energy sources, including hydro, coal, gas, and nuclear, and is starting to increase its investment in renewables like wind power. Nevertheless, Canada has exhausted much of our easily available hydro resources and coal is being phased out, particularly in Ontario where the government has recently taken the bold and unprecedented step of announcing the closing of all coal plants by 2007. The first of these plants has already been shut down this year. This decision is driven by the demand by Canadians for clean air. This leaves gas and nuclear to meet future requirements. However, gas is a finite resource subject to price and supply volatility and is most efficiently applied for uses other than electricity production. That leaves nuclear power as the only way to meet large-scale base load growth while ensuring long-term stability for both supply and cost.

How will this renewal of nuclear power in Canada come about?

In the short term, Canada is refurbishing the oldest CANDU reactors to extend their lives by 25 or more years. The reason for this is that the economics are very compelling – refurbishing a reactor that has reached the

end of its design life delivers a power plant at about half the cost of a new reactor and the levelized unit energy cost is not only competitive, but is much cheaper than gas in Canada.

CANDU reactors are designed from the outset to have their core structures replaced, and we have been aggressively developing new technology for efficient fuel channel replacement. Three plants in Canada have already been refurbished. In the immediate future, we are looking forward to announcements of the Bruce 1 and 2 refurbishments in Ontario, and the Point Lepreau refurbishment in New Brunswick. Eventually, the entire fleet of 22 CANDU reactors in Canada is very likely to be refurbished.

Refurbishment and life extension are not just occurring in Canada. Korea has started the process to refurbish their first CANDU plant, Wolsong 1, and there are indications that Argentina may accelerate its plans for refurbishing the Embalse reactor. In fact, it is highly unlikely that any of the current generation of CANDU plants throughout the world will be decommissioned when they reach the end of their original design life.

To meet the immediate need for new build in Canada, the CANDU 6 reactor is available for new build projects. AECL has been building CANDU 6 reactors continually over the past 25 to 30 years throughout the world. These reactors have performed very well and have a lifetime capacity factor of about 88%. In addition, the last six CANDU projects AECL has worked

on have all been delivered on time and on budget. For these reasons, we believe the CANDU 6 is an excellent choice for near term need for new power.

Within the next 4 years, the Generation III+ Advanced CANDU Reactor will also be available for new build projects. The ACR takes the best features of CANDU 6 and improves on them to reduce the capital cost and to enhance the passive safety features of CANDU. The ACR core is similar in size to our existing CANDU 6 design, but produces about 70% more power. The design uses a modular approach, which we first introduced for the Qinshan reactors, to reduce the construction period to only 42 months from first concrete. The Canadian government is fully committed to the ACR program, and the future domestic fleet of ACRs will substantially reduce Canada's greenhouse gas emissions.

Canada is also committed to developing a Generation IV Super Critical Water Reactor, based on the ACR design. Canada is a charter member of the Generation IV International Forum, and is an original signer of the Framework Agreement enabling international collaboration on R&D.

What I have outlined above is a long-term vision for the CANDU reactor that is based on relatively short evolutionary steps. In this way, we stay with the underlying CANDU technology and base each next generation reactor on the current proven performance and experience.

Next, I would like to discuss how we intend to achieve this long-term vision.

I feel that AECL is unique in that we maintain and advance the entire range of nuclear power related technologies. First, we develop the basic technology in our R&D programs and then design and develop plants based on the R&D. We also advance and apply the project management methodology, tools, and expertise to build the plants. We support the plants throughout their operating lives with services in specialized areas, including waste management and fuel storage. And finally, we decommission plants and have developed the technology for permanent disposal of nuclear fuel wastes.

But delivering new and refurbished plants is more than just technology and delivery. The appropriate business and financial models must also be developed to enable projects to go forward. In particular, for the number of new build projects that we have discussed so far at this conference, I believe that private sector investment will be essential. Therefore, AECL is developing and applying new business models that go far beyond the traditional approach, where government funding was the only option. These new models bring in private sector equity, establish partnerships to share and manage risk, and share the essential expertise. The disciplines associated with the new models require internal business and financial skills that are not traditionally present in engineering organizations. AECL has established

these skills and we are using them to assemble the most appropriate business model for project delivery.

Development, delivery, and support of the CANDU reactor constitute AECL's only business and our only focus. Since we don't manufacture equipment, our approach is to develop local supply in the countries in which we work. We believe that this focus on the technology and its delivery as opposed to equipment manufacturing is critical to our ongoing success.

To maintain cutting-edge technology, AECL needs state-of-the-art facilities and staff. Canada is a pioneering nuclear nation and our research laboratory at Chalk River is 60 years old. In addition, our main research reactor, the 120 MW NRU reactor is now 47 years old. With the resurgence of nuclear power, we are going to upgrade our infrastructure and either refurbish or replace our major nuclear facilities, including NRU. In addition, AECL has developed advanced technologies for the characterization, immobilization, storage, and disposal of low, intermediate, and high level wastes. These technologies are being systematically applied to the legacy wastes at the Chalk River site.

A common challenge that faces our industry is the departure over the next few years of the current senior generation of scientists, engineers, and technicians. In Canada, to address this problem, we are planning to facilitate the transfer of knowledge from one generation of experts to the next in a

number of ways. These include training and cooperative programs with universities, career extension for retirees to ensure experts in the last few years of their career are teamed with younger staff to transfer knowledge, teaming with partners who have complementary know-how, and renewing the investment in nuclear R&D.

Another common challenge is public support. I know that the entire nuclear industry throughout the world is working hard to build public confidence for the nuclear option. We know we are making progress when prominent environmentalists like James Lovelock support nuclear power as the only answer to the survival of civilization. And the public's growing realization that nuclear power is safe and clean, is starting to show up in the polls. Today, more than 75% of Canadians believe nuclear will be part of the energy mix going forward and this number increases to 88% in Ontario, Canada's largest nuclear province. The numbers on acceptance and support go even higher if you ask the same questions, but link nuclear to clean air.

These are just two areas where the entire industry needs to work together. Other areas include such topics as quality, safety, and operating performance, since the performance and safety of nuclear plants in any country will impact on the reputation and success of the industry worldwide.

In conclusion, I would like to leave you with one key thought. We can go backwards in time and build more fossil fuel plants, or we can move forward

and build clean nuclear power. In my view there is only one choice and that is to move forward. To do so, we are going to have to work together.

Thank you for your attention.