NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs **Telephone: 301/415-8200**

Washington, D.C. 20555-0001 **E-mail: opa@nrc.gov**

Web Site: http://www.nrc.gov

No. S-07-012

Remarks Prepared By
Dr. Dale E. Klein
Chairman
U.S. Nuclear Regulatory Commission

JAIF Annual Conference
Aomori, Japan

April 10, 2007

Thank you, Dr. Suzuki (Chairman, Nuclear Safety Commission of Japan)

Ladies and gentlemen, I am very honored that you have invited me to share some of my thoughts with you today.

This is my first trip to Japan. I have visited several nuclear-related facilities, and have had many productive meetings with officials in the Japanese government and commercial nuclear power industry. Last Thursday I spoke to the Japan Nuclear Energy Safety Organization, and met with Director General Hirose and President Nairai.

During this time of significant anticipated growth in the nuclear power sector worldwide, I think it is important for the nuclear power regulatory communities in our two nations to have effective lines of communication. And I think it is more important than ever that we continue, and even enhance, the many cooperative efforts in which we are engaged.

I say this because it is becoming increasingly clear that nuclear energy can no longer be regarded as a strictly domestic matter. The nuclear power industry is now an international one, from the upstream mining of the uranium ore, through nearly all the downstream steps of the fuel cycle.

This raises a variety of new challenges for commercial energy companies -- regarding intellectual property rights, manufacturing capacity, fuel supply, and other issues. It also forces those of us who are regulators to confront a new reality. We are becoming in many respects *de facto*

international regulators. In addition to these global developments, I think there are other facts regarding our two nations specifically that we need to keep in mind.

Together, Japan and the U.S. operate more than a third of the entire world's nuclear power reactors. We are both part of the handful of countries that have the complete fuel cycle. More importantly, we are both responsible caretakers of fuel-cycle technology. We both have well-developed government regulatory systems, and many years of operating experience.

I believe all these facts point to a common conclusion. Advanced nuclear nations such as ours have a special responsibility to set a good example as nuclear power expands around the globe. We should also think about ways that we might help guide this worldwide growth in nuclear energy, so that it proceeds in a safe and orderly way. I will say more about that in a moment.

First, let me mention a few issues that I believe both Japan and the U.S. will have to address as we prepare for the changes and growth in our own domestic nuclear power sectors.

I see two difficulties, or "pinch-points" resulting from the anticipated expansion in nuclear energy. The first is the need to train the next generation of construction workers, engineers, and managers.

Let me tell you about the situation in my country. A survey of the U.S. nuclear power industry conducted in 2001 estimated that demand for nuclear engineers through the end of the decade would be about 150 percent of supply, and the need for radiation protection professionals would be about 160 percent of the supply. That survey was prepared before the industry had given much thought to new reactor planning. Therefore, the next industry survey, due out later this year, will likely show an even more acute shortage of candidates to fill the waiting jobs.

In addition, our government will require more trained employees. The NRC alone will increase staff by a net of 200 professionals each year through 2008 to handle the increased workload of new plant applications and other business. The U.S. Department of Energy, the national laboratories, and other government agencies will also have personnel needs.

But instead of competing against each other, I have repeatedly said in my speeches back home that industry and government in the U.S. should focus on an intensive nationwide effort to expand the base of qualified people.

My understanding is that Japan also confronts the challenge of an aging workforce. So I would be very interested to hear about the ways you are addressing this in Japan, and any guidance you might offer the U.S.

The second difficulty we are confronting in the U.S. involves the manufacturing sector. The companies that will make the multi-billion-dollar orders for the next new plants must make critically important decisions as to where to buy their systems and components. Much of the technological capability to supply their needs now rests outside the United States. And many of the world's nuclear manufacturers are now operating at capacity. Right now, the lead time for delivery of reactor vessels is upwards of four years, and other key components have equally long backlogs.

In the face of those long lead times, nuclear projects will need to get in line and scour the globe for available components and materials.

The NRC has in place the rigorous inspection programs needed to ensure the quality and authenticity of the components that go into plants built in the United States. However, we cannot ensure the quality of the materials used globally, and if use of substandard materials should lead to a high-profile event anywhere in the world, the nuclear industry worldwide would suffer.

The world-wide demand for components, along with the consideration of nuclear power to meet America's energy needs, may serve as a springboard to rebuild U.S. technology and manufacturing capabilities. But while this would significantly facilitate the NRC's inspection process, we do not have the power to command a resurgence of U.S. manufacturing capability.

The situation in Japan, as I understand it, is somewhat different.

Japan is a center of nuclear component manufacturing. And it is well-known for its quality assurance programs. But it is unlikely that Japan alone could supply the entire global demand for nuclear components. So we know that other nations will also be involved in designing and building the elements of nuclear reactors. We also know that these countries may not have the same adherence to quality assurance. And as I mentioned a moment ago, a significant nuclear incident anywhere in the world, would have consequences everywhere in the world.

It seems to me that we both have an interest in seeing that the development of nuclear technology around the world goes in the right direction. We want to see every nation implement high levels of safety and strong safeguards in design and manufacturing. We want to see independent and reliable regulatory regimes established in every nation that chooses to have nuclear power.

I believe that greater international cooperation can help us address these challenges. And because Japan and the U.S. are senior nations in the field of nuclear power, I believe we have special responsibilities to ensure that the global expansion of nuclear energy proceeds in a way that promotes safe construction and operation.

Naturally, I expect that we will both continue to engage in various bilateral nuclear safety exchanges. And we will continue to participate in multilateral organizations such as the International Atomic Energy Agency (IAEA) and the Nuclear Energy Agency (NEA). In addition, I think the challenges I have outlined should include the development of mutually beneficial and innovative programs that leverage the knowledge and experience that has been accumulated by advanced nuclear states.

One example of this is the Multilateral Design Evaluation Program – or MDEP. Chairman Lacoste of France and I were on a panel at the Regulatory Information Conference in Washington, DC just a few weeks ago, where we explained this program to nuclear industry representatives from around the world.

MDEP capitalizes on the fact that, unlike the previous generation of reactors, the majority of plants to be built around the world in the next five to 15 years will likely be limited to a small number of relatively standardized designs, purchased from a limited number of multinational corporations. Through MDEP, we are undertaking an international effort to define the terms of how nuclear power

plants are planned, designed, built and regulated. Different nations may have different ideas of "adequate protection"; but I believe it would be an understatement to say that we should all agree on a standard set of metrics—in the sense of consistent definitions of terms. For lack of a better metaphor, I would say that it doesn't matter what color we paint the concrete, as long as we agree on the same standards of concrete's strength, consistency, etc.

While the first step of MDEP focuses on the planned design reviews associated with the AREVA EPR reactor, the next phases can move us toward leveraging the knowledge and experience of regulators around the world and providing a catalyst for convergence of associated codes, standards, and regulations.

My hope is that we can eventually extend these efforts on standardized licensing and design of reactors to other stages of the fuel cycle—including even a global regulatory framework for waste disposition.

As you know, the subject of reprocessing is taking on greater significance as the worldwide nuclear expansion proceeds.

I think you are familiar with President Bush's Global Nuclear Energy Partnership (GNEP). This is probably the most prominent current policy initiative addressing the nuclear fuel cycle, and specifically the issue of how to allow the spread of commercial nuclear energy without the proliferation of weapons-grade materials.

The U.S. made a policy decision in the 1970s not to continue developing reprocessing capabilities. Other nations, including France and Japan, chose another route. Japan's course of action is about to bear fruit with the start of commercial operation of the JNFL reprocessing facility, which I was privileged to tour yesterday.

I congratulate JNFL, and the Japanese utility industry, on the development of the Mixed Denitration Process, designed to minimize proliferation concerns and implement the full range of international safeguards. The facility is a true indication of Japan's leadership in the international nuclear community.

Related to the issue of reprocessing is of course the matter of nuclear waste. If the GNEP vision is ultimately realized, it would modify the material ultimately designated as high-level waste. That waste, however, will still require disposal, and I believe that the safest long-term option remains a stable geologic repository.

As you may be aware, there are some in the U.S who say that new nuclear power plants cannot be built in the U.S. without resolving the repository issue. I would point out that there are already some 70,000 metric tons of spent fuel in the United States. That material will not go away just because no new plants are built.

Of course, I hardly need to mention that waste disposal is a matter of concern for Japan as well. It seems to me that this is another issue that must be addressed worldwide, regardless of how any one country proceeds with further nuclear power development.

Ladies and gentlemen, there are many topics that I could go on to address in greater detail. But I am not a person who keeps hungry people from their lunch!

Let me close by saying that clean energy from nuclear power can benefit the people of the world, but only if nuclear technology is used responsibly. Japan and the U.S. are good examples of how this can be done. I believe that we should continue to be good leaders in the field of safe nuclear power. We should maintain the good working relationship we have. We should continue communicating and sharing information at all levels. And we should continue to demonstrate the great benefits of rigorous, fair, and independent regulatory oversight.

Thank you again for your hospitality, your attention, and your kind invitation to participate in this important conference.

###