

**Remarks of
Dr. Peter B. Lyons, Commissioner
United States Nuclear Regulatory Commission
at the
China - United States Ministerial-Level Joint Commission Meeting
on
Science and Technological Cooperation**

**Beijing, China
October 18, 2006**

“Nuclear Safety Cooperation and Peaceful Uses of Nuclear Technology”

It is an honor for me to join you here in Beijing and to represent the United States Nuclear Regulatory Commission (NRC). I greatly appreciate your generous hospitality.

Today, I am pleased to share perspectives with you on the strong global interest in nuclear energy and on the challenges and opportunities that this presents to nuclear regulators.

I will focus my remarks on three key topics: First, the increasing global interest in deployment of new reactors with improved technologies; second, the benefits of international collaboration on nuclear safety research; and third, the importance of cooperation among national regulatory bodies on safety and security.

Both of our countries share similar interests in construction of new reactors. I've seen projections suggesting that China may add as many as 30 to 40 new units by 2020. Currently, utility companies in the United States also anticipate a large need for increased power in the next 15 years and are discussing the possible addition of as many as 30 new nuclear plants. Almost half of these units are projected by our utilities to use the Westinghouse AP1000, the passively safe reactor, which the NRC certified in 2005. About 25% of the remaining units plan to use General Electric technologies, both the Advanced BWR, which the NRC certified in 1997, and the passively-safe Economic Simplified BWR, which the NRC is now reviewing for certification. About 20% of the new units plan to use the Areva Evolutionary Pressurized Reactor, which is in pre-certification review by the NRC.

In China, you have recent experience in reactor construction, but in the United States we have no current experience. Our last reactor construction permit was approved in 1973. Thus, we welcome increased collaboration through which we could learn from your construction experiences.

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The United States Department of Energy has undertaken the Next Generation Nuclear Plant (NGNP) project that will result in the development of a Generation IV high temperature gas reactor with the potential to provide dramatically improved safety with increased efficiency for electricity production and to produce process heat for commercial uses, including production of hydrogen. Just a few weeks ago, our Department of Energy announced awards valued at about \$8 million starting with Westinghouse to develop a pre-conceptual design of the NGNP, with subsequent awards anticipated to General Atomics and Areva. The Westinghouse team includes international researchers involved with pebble bed reactors.

China has already recognized the potential benefits of high temperature gas reactors. Two years ago I visited Tsinghua University to learn more about your exciting work in this area and later this week I will again visit the University to understand progress on your pebble bed reactor. China has been invited to join the Generation IV International Forum, which would enable further cooperation on this new area of great promise. The NRC's role in the NGNP, in which we would welcome collaboration with China, will involve the safety and licensing basis for such reactors. Such reactors present safety-related challenges quite different from the light water reactors in which both our countries specialize.

The U.S. Department of Energy is also engaged in an initiative, the "Global Nuclear Energy Partnership," aimed at, among other goals, assuring supplies of nuclear reactor fuel are available to countries that currently do not have fuel cycle infrastructures, while providing high assurance that proliferation of nuclear weapon materials does not occur. Initiatives of this general type were extensively discussed just one month ago at the Special Event of the IAEA General Conference in Vienna with participation from speakers from both our nations. As this initiative develops, I anticipate opportunities for further collaboration between our countries.

Many of the programs I've just discussed involve new technologies, uncertainties, and regulatory issues, along with opportunities for increased cooperation. Research must underpin all these vital areas. While research expands our frontiers by developing new technologies, it must also establish appropriate safety margins for new technologies for the protection of public health and safety. This brings me to my second key topic: the benefits of international collaboration on nuclear safety research.

Nuclear regulatory research programs are a foundation for nuclear safety, providing independent information and expertise needed to support regulatory decisions and to identify and characterize technical questions that may become important safety issues. We greatly value the bilateral cooperation described in "The Protocol between the NRC and the State Scientific and Technological Commission of the People's Republic of China on Cooperation in Nuclear Safety Matters," signed by our two nations in 1981. It was renewed in April 2004 when the former Chairman of the NRC visited this city.

Research underpinning regulatory issues can be expensive, and highly specialized facilities are frequently required. The global cooperation among nations on nuclear energy issues that we now enjoy offers excellent opportunities for many nations to utilize highly specialized facilities that may exist in only one nation. The NRC welcomes and is a part of many international cooperative nuclear safety research programs. As just one example of such work, both our nations participate in IAEA programs to share operational experience. This program enables us to learn from the experiences of others, which is far more economical and safer than repeating their experiences. Such international programs help all national regulatory bodies to accomplish our first and foremost task: safe reactor operations at all times.

Finally, my third topic is the importance of international cooperation among regulatory bodies on matters of safety and security. The perspective of the regulatory body is, of necessity, somewhat different than that of other government or commercial organizations engaged in developing and expanding nuclear power. I personally find great value in sharing views, perspectives, and information on our experiences with other international regulators. Our challenges in accomplishing the regulatory safety mission are surprisingly similar throughout the world. Thus we benefit greatly by establishing and maintaining regular communications, like those enabled by our bilateral Protocol.

With this cooperation in mind, I want to express on behalf of the NRC our appreciation for the visit of Mr. WANG Yuqing, Administrator of your National Nuclear Safety Administration (NNSA), to NRC headquarters in the United States in July of this year. Similarly, the NRC Chairman and I greatly appreciated the hospitality of Mr. LI Ganjie, Director General of your NNSA, and Dr. WEI Jiang, Director of your NNSA Division of International Cooperation, when they hosted a lunch for us in conjunction with the IAEA General Conference just one month ago.

I am especially pleased that China has joined with us in a multinational program, the "Multinational Design Evaluation Program" (MDEP). The goal of this program is to apply nuclear knowledge and operating experience from many nations in a cooperative effort to establish common regulatory standards for new reactor designs and to share resources in completing the necessary regulatory reviews. After the IAEA General Conference, Mr. LI and Dr. WEI met in Paris with the NRC Chairman and with senior regulators from the ten countries that are participating in guiding and implementing this program.

One component of MDEP involves sharing of regulatory information among nations that are evaluating license applications for similar technologies. If China proceeds with interest in the AP1000, we look forward to a cooperative effort to provide to you the information that we used in our design certification. Of course, a key concept of the MDEP is that, while seeking to improve regulatory effectiveness and efficiency, national regulators retain sovereign authority for all licensing and regulatory decisions.

In conclusion, I would like to emphasize that, as interest in new reactor plants continues to increase, the most important task of nuclear regulators must remain the continued oversight of nuclear power plant safety. Our cooperative bilateral efforts on nuclear safety, a strong foundation on which we can build further cooperation, contribute directly toward this goal. As I'm sure we agree, any nuclear incident in any country that negatively impacts public safety harms the reputation of nuclear power around the world.

Once again, I thank you for this opportunity to share views and exchange information. All the world's citizens benefit from greater international collaboration on peaceful, safe, and secure use of nuclear technologies. We share a common goal -- to help make the world a better place than the one we inherited. The NRC and I look forward to working with you in the future.



*United States
Nuclear Regulatory Commission*

Nuclear Safety Cooperation and Peaceful Uses of Nuclear Technology

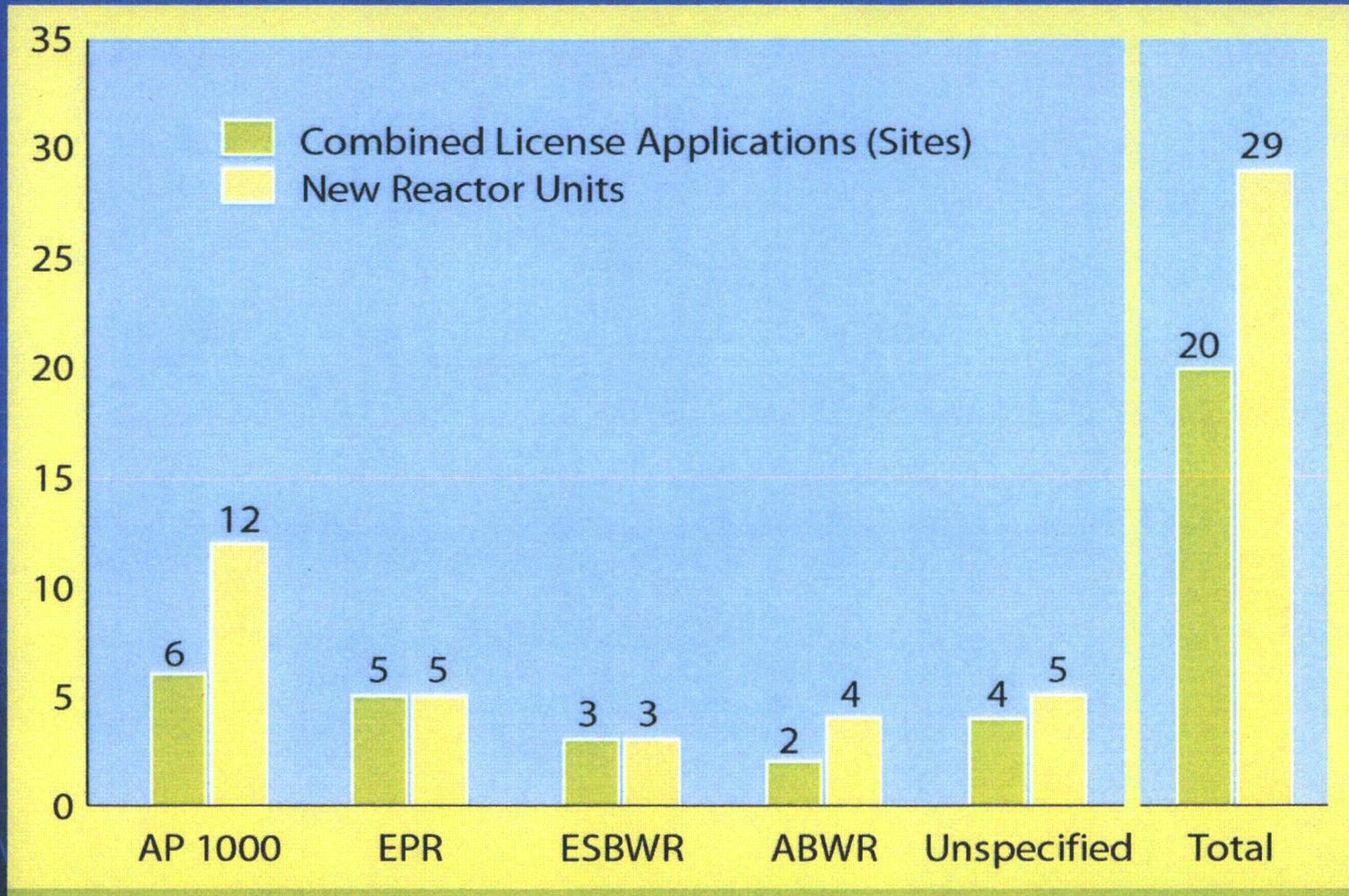
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Commissioner
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Key Topics

- Challenge of Increasing Global Interest in New Reactors and Technologies
- Benefits of International Collaboration on Nuclear Safety Research
- Importance of Cooperation Among International Regulatory Bodies

New Reactor Interest in U.S.



Valid as of October 2, 2006

U.S. Next Generation Nuclear Plant

- Generation IV High Temperature Gas Reactor Design
- Contract Awards Have Started for Pre-Conceptual Design Work
- Westinghouse Leading an International Design Team With Pebble Bed Reactor Experience

Global Nuclear Energy Partnership

- Assuring International Supplies of Nuclear Reactor Fuel
- High Assurance of Non-Proliferation
- Recent IAEA Special Event Discussed Such Initiatives

International Collaboration on Nuclear Safety Research

- Research is a Foundation For Safety
- U.S. Commitment to Bi-Lateral Cooperation with China Under Protocol Renewed in 2004
- U.S. and China Participation in IAEA Operational Experience Program

International Cooperation Among Regulatory Bodies

- Perspective of the Regulator is Always on Safety
- July 2006 – at NRC
NNSA Mr. WANG Yuqing meeting with NRC Chairman Klein
- September 2006 – at IAEA
NNSA hosted lunch for NRC
- Multi-National Design Evaluation Program (MDEP)

In Conclusion

- Safety Remains the Most Important Regulatory Focus
- Cooperative Bi-Lateral Efforts Help Support Safety
- The NRC Looks Forward to Continued Interactions with China