NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

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Remarks Prepared
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"Nuclear Energy – Enabling the World of Tomorrow"

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Good morning. It is a pleasure to be here representing Chairman Klein and the U.S. Nuclear Regulatory Commission at this very significant conference. Chairman Klein regrets that he is not able to be here, and extends his best wishes for a successful conference. As you may know, he was in Japan earlier this month fulfilling another commitment, and was unable to make another journey.

The title of this presentation, "Nuclear Energy – Enabling the World of Tomorrow," has great significance for the NRC. The Commission has formulated a Strategic Plan to guide us through the heavier workload ahead as the U.S. industry prepares to build new nuclear reactors for the first time in more than 30 years.

The Commission's objective under our Strategic Plan is to "Enable the use and management of radioactive materials and nuclear fuels for beneficial civilian purposes in a manner that protects public health and safety and the environment, promotes the security of our nation, and provides for regulatory actions that are open, effective, efficient, realistic and timely."

Note that the first word of our objective is "enable." We view the regulatory task ahead as one of *enabling* the design and construction of new, safe and secure nuclear technologies. It is easy for a regulator to obstruct and delay unnecessarily, but that is poor regulation. It requires much more effort to enable the use of a valuable technology through the timely development and application of fair, stringent, and clear regulatory standards. That is the task we have set for ourselves at the NRC.

One of the most important themes we stress is the need for the NRC to be a strong, credible, and consistent regulator. As a regulatory body, the NRC does not serve as an advocate for or against commercial nuclear power generation. Rather, we believe that the industry and the general public should have a reasonable expectation of timely regulatory decisions based on good science and high-quality engineering practices.

We will hold our licensees accountable. We will articulate our requirements clearly. We will be demanding and we will be responsive to their legitimate needs and concerns. All stakeholders in the nuclear industry — the financial community, and especially the public — must be made aware of the status and progress of issues of interest to them.

In short, our goal is for the NRC to provide, to the maximum extent possible, the regulatory oversight and stability needed for this rapidly expanding, technologically complex and capital-intensive industrial sector.

Let me spend a little time now describing some of the work ahead of the NRC as we address the expected revival of the commercial nuclear power industry in the U.S. For instance, the NRC has pre-certified four advanced reactor designs, and is working on completing or updating the certifications of several others. Our program of license renewal is also working smoothly. About half of the nation's nuclear reactors have either received or applied for 20-year extensions of their 40-year operating licenses, and we expect to get dozens more in the future.

Also, the Browns Ferry 1 nuclear plant is seeking approval to restart during the first half of this year, after more than 20 idle years. We are also reviewing a number of applications for power uprates. Approval of the Browns Ferry restart and the uprates would put an additional 1350 megawatts of nuclear-generated power on the grid by this summer.

As you may know, the NRC's siting and licensing regulations have improved significantly. It is fair to say that the advent of standardized design certification, early site permitting and the combined operating license has contributed to the likelihood of new nuclear projects in the U.S.

The new regulatory scheme has now recorded its first major milestones, with the approval of the Clinton and Grand gulf Early Site Permits last month. Two more are pending. Later this year, the most significant testing will begin, as we receive the first combined license application for a new power reactor, to be quickly followed, we are told, by about 30 more.

In addition, the NRC last week issued a license for a new centrifuge uranium enrichment plant, and we are now reviewing an application for a mixed-oxide fuel fabrication facility. Reviewing a license application for the Yucca Mountain waste repository would also represent a tremendous amount of work, assuming DOE submits its application in July 2008.

All that is on top of our "regular" workload of ensuring that the 104 existing reactors continue to operate safely. And despite all the publicity surrounding new reactor applications, we still consider the regulation of existing reactors as our most important duty.

The safe operation of existing plants protects public safety, and makes possible tomorrow's power plants. That is why the nuclear industry cannot afford to become complacent. They cannot let future plans distract them from their current operations. If anything, we will be increasing our vigilance of current plants to check for troubling signs, because continued safe, efficient performance is so important. This is also a key to maintaining public confidence in the very companies that are planning new construction.

In preparation for our expanded workload, the NRC already has increased staff by 371 positions in FY 2006, and will add about 600 more positions by the end of next year. Of course, the net increase will be somewhat lower because, like most Federal agencies – and the nuclear industry – we have an aging workforce, and are losing key employees to retirement.

We also have made the necessary organizational changes to handle new reactor applications. Our Office of New Reactors, completely separate from the Office of Nuclear Reactor Regulation, is now up and running, as is a new construction inspection office.

We're still looking at possible procedural changes that would reduce the review time required for early site permits and combined operating licenses, with no compromise on safety. That is not an unrealistic goal, if industry does its job at the beginning of the process.

If the industry does its job – that's the key. We have made it clear to the industry that a quality submission of a Combined Operating License, license renewal, design certification or anything else takes less time to review than a bad one. Quality and clarity of submissions will equal timeliness in NRC regulatory reviews.

The NRC expresses concern about industry complacency, and about the quality of applications because that is our job. But we recognize that the U.S. nuclear industry has dramatically improved its performance over the past two decades. Without that improvement, there would be no nuclear renaissance in the U.S., and the NRC would be preoccupied with decommissionings, instead of license renewals and new reactor applications.

This recognition that the nuclear power sector is on the verge of significant growth leads to two concerns that may represent difficulties for future growth.

The first involves the manufacturing sector. As we confront the prospect of a global nuclear expansion, the companies that will make those multi-billion-dollar orders must make critically important decisions as to where to buy their systems and components. Clearly, much of the technological capability to supply their needs now rests outside the United States. 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.

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.

Because a significant nuclear incident *anywhere* in the world would have consequences *everywhere* in the world, it seems to me that we all have an interest in seeing that the development of nuclear technology around the world goes in the right direction. Japan and the U.S. are senior nations in the field of nuclear power. I believe that we should work with the other advanced nuclear nations to ensure that the global expansion of nuclear energy proceeds in a way that promotes safe construction and operation.

The growth of the worldwide nuclear industry may slow down in the long term, however, unless we address the second difficulty. This is the need to prepare the next generation of construction workers, engineers, technical workers, and managers.

A 2001 U.S. nuclear industry survey 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 done before the recent movement toward new reactor planning, and I'm told the next industry survey, due out later this year, will show an even more acute shortage of candidates to fill the waiting jobs.

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. In the U.S., the Department of Energy, the national laboratories and other government agencies will also have personnel needs.

It is not in anyone's interest to spend time and money chasing after a limited number of candidates. Instead of competing against each other, industry and government must focus on an intensive nationwide effort to expand the base of qualified people.

The U.S. nuclear industry is working on many fronts to address this critical need. It has launched major programs to provide scholarships, training programs, and recruitment drives. But this is still an enormous challenge that will require even more concerted effort by people at the highest levels.

It is also a challenge that extends beyond the United States' borders. The same need to address future workforce issues is likely confronting other countries with mature nuclear industries whose workforce, like that of the United States, may be aging.

And there are other issues that we can extrapolate worldwide. The U.S. nuclear industry has restored itself by sharing knowledge to improve performance. Lessons learned from that experience can and should be applied internationally. Open cooperation in standardizing design and applying best practices will help to set new and higher standards of safety and operating efficiency for nuclear facilities worldwide.

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One way in which we can improve quality and efficiency in all aspects of the industry – design, manufacturing, construction, operation *and* regulation – is by working together. One such effort is the

Global Nuclear Energy Partnership (GNEP). Another, in which the NRC is more directly involved, is the Multinational Design Evaluation Program (MDEP).

MDEP capitalizes on the fact that, unlike this 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.

U.S. regulators and our international counterparts are well along in the planning and implementation stages of MDEP. Stage 1 is aimed at near-term benefits through sharing technical information concerning the design and construction of the AREVA EPR reactor with regulators in Finland and France, who are in the process of licensing the EPR.

The initial steps for Stage 2 are proceeding in parallel with Stage 1. The aim of Stage 2 is to achieve conformity in participating countries among the multitude of codes, standards and regulations associated with the design and regulatory review of new nuclear plants. At meetings among senior regulators in Paris last September, we approved the selection of the OECD's Nuclear Energy Agency to serve as the secretariat for the project, with technical direction coming from the participating countries.

This is an extremely important effort, since regardless of where new facilities are built, they will likely purchase their components from a number of different international sources. If in fact lack of worldwide manufacturing capability looms as a constraint on international growth, uniformity of codes and standards could help to ease bottlenecks.

Beyond that, MDEP and similar efforts should foster the safety of reactors in those countries with less experienced and extensive regulatory regimes, and enhance the safety of advanced reactor designs by encouraging a more comprehensive safety review. And eventually, international regulatory partners will become accustomed to sharing insights on more and more issues that will improve licensing processes and reactor safety around the world.

In the coming nuclear renaissance, the key to providing nuclear power for the benefit of the people of the world is the comprehensive sharing of knowledge. Chairman Klein and I encourage all of you to participate fully in any and all activities that advance that aim.

Thank you very much for your kind attention.