NRC NEWS

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"An Emerging Fuel Cycle Renaissance?"

Remarks Prepared for NRC Chairman Dale E. Klein

Baker Center for Public Policy

Woodrow Wilson Center, Washington DC

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Thank you.

Before I begin my remarks, I want to mention that this is a somewhat somber time for us at the Nuclear Regulatory Commission. Two days ago, the Commission held a memorial ceremony for our late colleague, Ed McGaffigan who—as you may know—died on September 2, after a long battle with cancer.

His wisdom and experience as the longest-serving commissioner in our agency's history, will be greatly missed.

But Ed himself would have told us that we shouldn't take too much time before getting back to work. And the truth is, we have a lot of work to do.

In fact, I think it can be safely said that the Nuclear Renaissance has officially begun.

I don't say that as an advocate for or against nuclear power. It is just a statement of fact, considering that last week the NRC received the first application for a new reactor license in thirty years. Over the next year and a half we expect about twenty more license applications.

We knew this day was coming, and we have invested a great deal of thought, planning, and effort into getting ready.

And we are ready.

I've assured both industry and Congress that the NRC will not be a bottleneck; and I am confident that the plan we have in place will allow to us to perform timely, quality reviews with no compromise of safety.

Having said that, I don't mean to suggest that we don't still have challenges ahead of us.

For one thing, both industry and the NRC are feeling the effects of the aging nuclear workforce—which is happening just at the time the Nuclear Renaissance is unfolding.

At the NRC, in one two-week pay period early this year, nearly 1,000 years of regulatory experience walked out of the agency due to retirements; and that included 560 years of technical experience.

I have also been told that 75% of the workforce at the DOE National Labs will be eligible for retirement by 2010.

On the industry side, I believe that NEI will soon publish its updated nuclear industry workforce survey.

One finding which they have already released is this: roughly 35% of current utility personnel will be eligible for retirement within 5 years.

This is not a crisis… yet. But it has the potential to become one.

I should mention that the need for workforce development is not just limited to nuclear engineers, but also includes other engineering and scientific disciplines as well… not to mention the skilled craft workers such as electricians, welders, pipe-fitters, mechanics, electronics technicians, and others needed to construct and operate the plants.

At the same time that we need to address that challenge, we are also facing another one. Because the growth of the nuclear industry was basically stalled for two decades in the U.S., there has been substantial progress in nuclear technology elsewhere in the world that we as regulators don't really have experience with.

Specifically, while the current fleet of light water reactors were designed and built in the analog electronics era, the next wave of reactors will likely move away from analog toward digital instrumentation & control. And that is just one of the challenges we face in the short-to-medium term.

Over the long term we can anticipate even more radical technological changes, including advanced and innovative new reactors and fuel cycle facilities.

As I think many of you already know, President Bush has outlined a plan for embracing these technologies in a way that expands the safe use of nuclear energy, while reducing the threat of nuclear proliferation, through his Global Nuclear Energy Partnership—or, GNEP.

GNEP is intended to develop the systems, technologies, and policy regimes to allow recycling of used light water reactor fuel.

It seeks to eliminate, to a large extent, the actinides in fast-burner reactors in a way that enhances proliferation resistance. The resulting waste streams are envisioned to have characteristics that would lessen the volume and thermal challenges for a geologic repository.

This represents a substantial shift in the domestic approach to the back end of the fuel cycle. In fact, I think it even represents a major shift in the global approach to managing the fuel cycle.

Of course, it remains to be seen whether GNEP will inaugurate what we might call a "Fuel Cycle Renaissance."

I am sure that Secretary Bodman will say more about GNEP when he delivers his remarks. So let me just mention what the development of GNEP will entail for the NRC.

The U.S. Nuclear Regulatory Commission was a light-water reactor agency when it was formed; and we continue to be a light-water reactor agency today.

But we know that a new day is coming.

The transformation in nuclear power technology that we can see on the horizon represents an unprecedented opportunity for a new global effort to oversee the safety and security of new and innovative reactors, and other fuel cycle facilities.

By working together, the international regulatory community can provide clear, concise, and internationally accepted guidance on safety and security requirements to the designers and architects of these new facilities. This will help ensure that safety and security are fully integrated into all aspects of a facility's design and operational characteristics.

To that end, I proposed a new initiative at the recent meeting of the International Atomic Energy Agency in Vienna for developing a multinational regulatory approach to licensing.

This would be a cooperative international effort to delineate the regulatory design requirements for innovative reactors and other fuel cycle facilities.

I believe that such an activity should be led by the regulators who oversee the design and development of nuclear power plants, with active participation from other national regulators, and in coordination with the IAEA and NEA.

As I mentioned in Vienna, this is not a plan for imposing U.S. programs or standards on the world.

We know that other nations have been leaders in developing new nuclear technology for at least the last two decades, and their experiences are important if we are to embark on a multinational regulatory framework.

This is a suggestion for mutual collaboration—recognizing that each country is responsible for applying and enforcing those standards and requirements it determines to be necessary for safety and security.

Of course, even if this effort is entirely successful, there are still other regulatory challenges we must confront.

For instance, the NRC faces a monumental task in the review of a license application for a potential Yucca Mountain waste repository. Nevertheless, we stand ready to initiate this review when DOE submits its license application.

Low-level waste issues may also present challenges in the future. Without adequate low-level waste disposal sites, this nation may be faced with the likelihood of even more interim storage sites… and possibly the curtailment of medical procedures and other activities that generate low-level waste.

My fellow Commissioners and I believe this is something we may have to address in the near future.

There are also issues involving what might be called the "front end" of the fuel cycle.

When the price of uranium fell in the early 1980s, conventional uranium mining production in the United States dropped precipitously.

Many conventional uranium mills ceased operations or closed permanently and began decommissioning and reclamation. There is currently one NRC-licensed conventional mill and two mills that have ceased operation but expect to resume operation in the future.

There are six in-situ leach facilities that are operating or are licensed to operate. Based on discussion with the industry, the NRC expects a considerable increase in licensing activity, as many as 12 new applications, for both types of uranium recovery facilities in the foreseeable future.

I don't believe that I, or anyone else, can say for sure what other challenges might arise… but I think those are some of the major issues we will need to deal with.
[PAUSE]

Ladies and gentlemen, before I conclude, let me make one final observation.

As I look out across this room, I must say I am amazed at the very high caliber of participants that the organizers of this conference have brought together.

It reminds me of the story of when John F. Kennedy invited several dozen Nobel Prize winners to the White House for dinner and remarked, “Never has so much talent been assembled in one room since Thomas Jefferson dined alone.”

By the same token, I am tempted to say that never has so much expertise on nuclear matters been gathered in one room since Admiral Rickover shared a beer with Albert Einstein.

Surely, then, by leveraging this awesome collection of knowledge and talent… by joining forces—not only across agencies within the U.S. Government, but especially through constructive international cooperation—we can continue to assure sound oversight of the safety and security of nuclear power.

Thank you.

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