



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-07-022

"Expanding International Efforts to Improve Nuclear Safety."

NRC Chairman Dale E. Klein

**NEA Forum
Paris, France**

June 12, 2007

Thank you.

This meeting of the NEA occurs at a critical time. As we face significant anticipated growth in the nuclear energy sector worldwide I think it is more important than ever for the international regulatory community to have effective lines of communication. Clearly, the safety of the world's nuclear power plants can only be enhanced through the many cooperative efforts in which we are engaged.

I would even say that the need for global cooperation on nuclear safety is an urgent matter, for one simple reason. It is becoming increasingly clear that nuclear energy can no longer be regarded as a strictly domestic matter for any individual country. Nuclear power is now a truly international industry, 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: the regulatory decisions we make in our home countries can have a profound effect on global energy policy.

So it seems to me that nations with advanced nuclear programs such as the member nations of the NEA, and organizations such as this, have a special responsibility to promote safety and security as the use of nuclear energy expands around the world.

Of course, every nation possessing nuclear power can—and will—determine its own final standards for both safety and security. In the United States, for example, we have found the practice of stationing Resident Inspectors at each and every nuclear plant to be a highly effective way to provide regulatory oversight. It also has the benefit of promoting public confidence in the safety of nuclear power. We recognize that other nations may employ different oversight strategies, but the

Resident Inspector program works well for our country.

Whatever the variations in national standards, I believe there should be a three-tiered approach to ensuring the safety of every commercial nuclear reactor: 1) the plant operators and owners, 2) a strong and independent regulatory body, and 3) a sovereign national government that not only authorizes and supports the regulatory process, but also supports development of the robust educational programs necessary to develop its technical infrastructure.

Let me now outline a few challenges that I think we must confront in order to keep this three-tiered safety oversight function running smoothly.

First, as industry pushes ahead with plans to build new reactors, I am concerned about the ability of the manufacturing sector to supply high-quality components in a timely way. While the nuclear manufacturing industry used to consist of several national companies serving the world's needs, over the years these companies have merged or been bought out to form multi-national companies. Still other companies migrated away from support of nuclear power in light of declining market opportunities in their countries in the past decade. This consolidation of manufacturing could potentially become a bottleneck for future growth.

Moreover, not only have the number of firms decreased, but many or even most of them 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.

I should point out, however, that the relatively small number of firms producing major components at least makes it relatively easier to oversee the quality and authenticity of these components. We face a different challenge in ensuring the quality of the thousands of smaller parts and materials that are manufactured in other parts of the world. The construction of a commercial nuclear plant today involves pumps, valves, motors, fans, pipes... and even bolts... that may be produced by any number of companies—both private and state-owned—around the world. And the close scrutiny that regulatory agencies can bring to bear on major manufacturers to assure that quality components are produced does not always apply with the same intensity to the sub-vendors that supply parts and materials to the manufacturers.

I propose, therefore, that we establish more extensive channels of communication to share information about any components or equipment that may be substandard, counterfeit, inadequate or inappropriate to a nuclear power plant. Regulatory agencies and industry would benefit from sharing this data under normal circumstances, but it seems to me even more critical during the current worldwide push to build new plants.

Whether it involves major components, smaller parts, nuclear plant designs, or the actual construction and operation of power plants, we all have an interest in encouraging high levels of safety, and strong safeguards in every country that participates in the fuel cycle.

Another challenge is workforce development. No nuclear reactor can operate without trained and dedicated people who have made safety a priority. Regulatory bodies, too, must also have trained and knowledgeable staff. So the global growth in nuclear power compels all of us to focus on training the next generation of construction workers, electricians, welders, engineers, operators, managers... and regulators.

You may be aware that the NRC is engaged in strenuous efforts to increase our staff by a net of 600 people to handle the increased workload of new plant applications and other business. One thing we have found out is how important it is to start this process as early as possible.

Obviously, we cannot simply hire people off the street and send them out to be nuclear power plant regulators the next day. But even when hiring people with substantial experience in industry, we have found that it takes six months to a year of training before that person begins thinking and acting like a regulator. For recent university graduates, it takes one to two years.

So that is one of our “lessons learned” – and for those NEA members who are facing this same challenge, I would be very interested to hear about the ways you are addressing this, and any guidance you might offer the U.S.

Another point that I make in my speeches is that it is not only plant workers and site managers who must have an adequate appreciation for safety. As regulators we have a legitimate interest in seeing that the “captains” of the nuclear energy industry—the senior executives of the power companies—also have a proper appreciation for the technical, engineering, and security challenges involved in operating commercial nuclear reactors.

When I observe American utilities spinning off their nuclear energy businesses, or see plans for changes in the ownership of nuclear power companies in the U.S., or new companies wanting to build nuclear plants, I think it is appropriate to reiterate that the nuclear energy business is in many ways unique, and should be treated as such.

While I am concerned by the potential over-exuberance of some in the U.S. investment community who want to jump on the nuclear “bandwagon,” I think we should also view with caution the enthusiasm of international energy companies and nuclear advocates for selling nuclear power plants to nations without a robust regulatory program. Deliberations about adopting nuclear power should be based on practical considerations, sound business practices, and—above all—strong regulatory governance to ensure the safety of people and the environment.

It would make no sense to purchase a fleet of airplanes, and only then begin thinking about standards for safe runways and aircraft maintenance, pilot certification, and air traffic control personnel. By the same token, the establishment of a stable, independent nuclear regulatory body, with clear guidelines, standards, and procedures, should be developed prior to any plans for building nuclear power plants.

Of course, there is already good work that is being done by international organizations such as the NEA and IAEA to assist nations in setting up nuclear regulatory programs. But while this work is important and necessary, I think we would readily admit that it is not sufficient, for the simple reason that these agencies have limited resources, and cannot tailor a specific program that meets each nation’s specific needs and circumstances.

Nor can international agencies take on the function of regulatory oversight directly. Neither this organization nor the IAEA is the world’s nuclear regulatory body.

It would seem, therefore, that we—the member states—must be more active in offering our support, and perhaps even think about more formal structures for providing direct and meaningful assistance to nations that wish to develop nuclear power in responsible ways. Rather than telling nations “This is wrong,” or “You shouldn’t do that,” we are more likely to be effective if we say, “If

you want to develop nuclear power safely, these are the things one needs to consider.”

Moreover, I think that industry has the means and the motivation to help us to provide this support. Regulatory agencies have oversight responsibility, but it is the owners and operators of commercial nuclear power plants that have the primary duty to ensure the safe and secure operation of their facilities.

This is a lesson that was brought into sharp focus in the United States during the Three Mile Island event in 1979. After that incident, the U.S. industry came together and created the Institute of Nuclear Power Operators to share information on both good and bad practices. Today, INPO is a critical part of the way the U.S. industry polices itself, and reinforces the NRC’s commitment to safety.

The NRC is responsible for seeing that all of our nuclear power plants meet the minimum requirements to operate safely. But it is INPO that pushes the operators to strive for excellence in operational performance. We have found that the best operating plants are often among the safest, and INPO plays a major role in persuading its members to improve their operational performance.

Based on the success of this model, therefore, I hope we would all encourage greater participation in the World Association of Nuclear Operators. When speaking to industry in the U.S., I frequently remind them of the importance of organizations such as INPO and WANO in light of the fact that interest in nuclear energy is growing internationally, as one way to address global climate change.

Another good example of international cooperation is the Multinational Design Evaluation Program – or MDEP. I think perhaps Chairman Lacoste or others may provide more information about the latest developments in MDEP, and the international effort to define the terms of how nuclear power plants are planned, designed, built and regulated. Let me just say for now that while different nations may have different ideas about what constitutes “adequate protection,” 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.

One possible area for expansion of these efforts is in the security arena, and I would like to see us move toward increased harmonization in the establishment of common threat parameters, and even beyond that. You may know that in the U.S. we are wrestling with the issue of potential aircraft impacts at the design stage of new reactors; and I think that other nations are—or soon will be—considering this issue as well.

MDEP involves participation by both regulators and industry, and I think this reinforces my earlier point that safety cannot be considered the responsibility of regulatory bodies alone. A commitment by the utilities and power plant owners, a strong and independent regulatory agency, and international cooperation will all be necessary components for nuclear safety.

Let me close by saying that clean energy from nuclear power can benefit the people of the world and contribute to reducing greenhouse gas emissions, but only if nuclear technology is used responsibly. We should maintain the good working relationships we have developed. 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 attention. I look forward to discussing these and other important issues with you throughout the remainder of the conference.