NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

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Predictability and Balance

Remarks of Commissioner Nils J. Diaz
United States Nuclear Regulatory Commission
Before the Special Symposium
America's Energy Challenge - The Nuclear Answer
Texas A&M University
College Station, TX
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It is a real pleasure to speak today at this special symposium on America's Energy Challenge - The Nuclear Answer. I will be presenting my individual views today. They do not necessarily represent the views of the U.S. Nuclear Regulatory Commission (NRC), except when indicated.
I was asked to express my views on what is necessary to move forward with the new national energy policy and the prominent role of nuclear energy. I will focus on what I believe the NRC needs to do.

But I do not want my position on what now are critical issues to be lost in the discussion. I believe it is my responsibility to deal first with national security considerations, i.e., security at nuclear facilities. Therefore, I would like to state that:

- I strongly believe that having abundant and reliable energy is a national security issue. Moreover, it is a given that nuclear energy is an essential component of the energy portfolio of the United States.

- I will work to ensure that common defense and security activities are an integral component of the NRC's regulatory framework. These activities should be conducted as an enhancement, not a detriment, to our protection of public health and safety.

- I will continue striving to maintain nuclear power and radiation technologies as safe and as useful to the people of America as they are and should be.

We all live with the realization that the attacks of September 11 have changed our lives and the way we do business. What I am not willing to accept is that anyone but the United States of America determines how we are going to change. Freedom and the pursuit of happiness are at the core of our

democracy, and no one is going to take them away from us. We must defend our way of life, not only from terrorism, but from those misguided interests that, even when well intended, could be harmful to our national interests and energy security is high on the list of vital national interests.

There are multiple assaults being launched - and in crescendo voices - using the attacks of September 11 to unjustifiably brand nuclear facilities as highly vulnerable and as dangerous as an "American Chernobyl". I answer these voices by saying that America's nuclear facilities are hardened in multiple ways and have the best physical security of any industrial infrastructure in the country. As you know, nuclear power plants in the U.S. have effective inherent capabilities to protect health and safety through such features as robust containment buildings, redundant safety systems, highly trained operating crews, and tested emergency plans. The bottom line is that the public health and safety would ultimately be protected, even if the containment is somehow damaged by an airplane. The containment is not the last line of defense, it is but one line of defense. America will protect its people, acting beyond site boundaries if needed.

Nuclear power plants compare quite favorably with many large and complex industrial facilities, including chemical plants, in terms of operational safety, safety infrastructure and physical protection. It is important to state to the American public that nuclear power plants are specifically designed and operated to protect against a terrorist attack and acts of sabotage.

I do not believe the doomsday scenarios being portrayed for nuclear facilities because, among other things, they do not take into account the decisive and powerful resources that the country would use to interdict and mitigate the consequences of a terrorist attack on any of our facilities that have hazardous materials. In addition, licensees and the U.S. Nuclear Regulatory Commission maintain very effective and frequently tested emergency plans whose sole purpose is to reduce hazards to the public. I can assure you that our licensees, the NRC, and Federal, State, and local officials, work together to achieve a high degree of safety and security.

It is true that the operation of industrial complexes involves risks, which are not zero, but which were not expected to be zero. A small radioactive release, or even a large radioactive release under some very extreme circumstances, cannot be completely ruled out. What I am going to rule out is that the health consequences of a Chernobyl-like scenario would be applicable to the United States. Chernobyl was much more than a catastrophic reactor failure and the release of enormous quantities of radioactivity to the environment. Chernobyl's failure was the failure of a totalitarian society to protect and care for its people after a disaster...and this horrific mishandling of public health and safety cannot and is not going to happen in America. We will take care of our people, promptly and passionately, as September 11 has shown, taking risks to avoid risks. Make no mistake, America will deliver the necessary responses to protect public health and safety, and therefore, there will be no "American Chernobyl."

The Chernobyl disaster was costly in many ways, but the consequences were and are still being exaggerated and distorted into something worse than what they were in terms of health effects. For the record, what really happened at Chernobyl, in terms of public health and safety, was:

- a catastrophic release of radioactivity fueled by a fire in a combustible graphite reactor core, without a containment, that burned for many hours

- thirty-one prompt fatalities, twenty-eight due to acute radiation exposure of workers and firemen that were sent to put out the fire (we now have a deeper appreciation of firemen everywhere)

- no other prompt fatalities, outside or inside the site

- one major, established delayed health effect, that is especially bad because it was avoidable: about eighteen hundred children with thyroid cancer, with fewer than a dozen reported fatalities, due to the callous disregard of the former Soviet Union for its people. There are no other latent cancers attributed to Chernobyl. The 2000 UNSCEAR report states that "apart from this [thyroid cancer] increase, there is no evidence of a major public health impact attributable to radiation exposure 14 years after the accident. There is no scientific evidence of increases in overall cancer incidence or mortality or in non-malignant disorders that could be related to radiation exposure."

- site recovery accomplished, with the other reactors continuing to operate for years; permanent shutdown will be effected years from now

- substantial areas of land that were left radioactively contaminated and unused because of financial constraints and political maneuvering.

I'd like to make additional points regarding the latent health effects of Chernobyl because the word cancer, like the word radiation, can be used to strike fear in the minds of people. Although thyroid cancer is usually treatable, it can have serious consequences and can be life-threatening if untreated. Evacuation and the use of potassium iodide pills would have significantly reduced the incidence of thyroid cancer. Leukemia has been expected to be among the early primary latent health effects seen among those exposed to significant amounts of radiation, yet excess cases of leukemia that can be attributed to Chernobyl have not been detected.

I am not trying to compare in any way American reactors to Chernobyl-type reactors because there is no comparison. Our reactors are so much better and so is our society. What I am trying to portray is that the failure of the former Soviet Union to do what was needed to mitigate the accident significantly contributed to its consequences. Can the United States of America do better than that? You bet we can. Therefore, as we face the challenges of today and tomorrow, I will be publicly responding to the doomsayers, to counter the unjustifiable fear that they can cause in our people and the damage they could inflict to our common defense and security, our economy, and our well-being.

Now back to the future of nuclear energy.

Since I have been with the Commission, I have been stressing that whether we make changes or we stay the course, it is indispensable that our performance be predictable and fair. Besides being excellent regulatory policy, the socio-political nature of the uses of radiation and nuclear energy demand predictability and fairness.

I believe that the NRC has been performing with predictability and fairness over the past few years. Predictability is essential for energy planning and it could very well be that it is needed now more than ever. The reason we are here today is to discuss the implications for nuclear energy presented by the National Energy Policy for the United States that the President and the Vice President of the United States delivered a short time ago. This was a short time ago by the calendar, but it seems like very old news in light of the events that have taken place in our nation and in the world.

The National Energy Policy is designed to help bring together business, government, local communities and citizens to promote dependable, affordable and environmentally sound energy for the future. In this report, the President supports the expansion of nuclear energy in the United States as a major component of the national energy policy. Notably, the report states that the NRC has made great strides to provide greater regulatory certainty while maintaining high safety standards. It is worthwhile to try to understand what I believe is a basis that underlies the potential for bringing nuclear power generation to center-stage in the debate on the energy policy for our country. Shown in Table 1 is a compilation of important aspects of the debate, summarizing what has changed in 20 plus years. The predictability of technical, regulatory and operational safety is improved and appears to favor development.

In the nation's interest, the NRC has been asked, with due consideration for safety and environmental protection, to consider as priorities for nuclear energy generation:

- evaluating and expediting applications for licensing new reactors;
- facilitating power uprates of existing plants; and,
- relicensing existing nuclear power plants.

I believe it is appropriate now that these issues also be considered in the interest of the common defense and security. Each and every recommendation of the President's report is to be assessed within the legal requirements established by the NRC mandate to ensure adequate protection of public health and safety and the environment.

I will now summarize how the NRC has addressed, and I believe should continue to address, the three NRC priority issues discussed in the national energy policy.

On the potential review and licensing of new advanced technology reactors, the NRC has been preparing additional capabilities to respond to the nation's demands. Much groundwork was done early, and a lot of it is useful to address today's issues. 10 CFR Part 52, "Early Site Permits; Standard Design Certifications; and Combined Licenses for Nuclear Power Plants," was promulgated in 1989 (and amended in 1992) to improve the efficiency of the regulatory licensing process. I am convinced that the present pathway for potential licensing success of certified or certifiable new reactor applications is Part 52. First, it exists -- not a minor issue. Secondly, it contains the requirements for assurance of safety and the processes for their implementation. And lastly, it can be upgraded to meet technological advances that require new licensing approaches, without compromising safety. The statement of considerations for Part 52 states: "The future of nuclear power depends not only on the licensing process but also on economic trends and events, the safety and reliability of the plants, political fortunes, and much else. The Commission's intent with this rulemaking is only to have a sensible and stable procedural framework in place for the consideration of future designs, and to make it possible to resolve safety and environmental issues before plants are built, rather than after." <u>This statement is as timely now as it was then</u>. Significant work has been in progress in the past year to address needs in this area. The NRC is preparing to process the industry-announced early site permit applications that are expected next year.

Another priority, and not a minor one for the present energy scenario for the United States, is power uprates. You are well aware that U.S. nuclear power plants have been increasing their power rating by a few percent, with relatively small changes in equipment and operations. This will probably continue, but of added significance now are the extended power uprates that licensees are beginning to request. For example, supported by General Electric Topical Reports, as many as thirty Boiling Water

Reactors may submit applications for increasing their power rating up to twenty percent. The NRC recently approved a fifteen percent power uprate for Duane Arnold. This was the first extended power uprate completed. Seven extended uprates are being reviewed by the NRC and more are expected. The industry estimates that up to ten percent additional power generation -- or about 10,000 MW electrical capacity -- could be achieved in the next few years, if economic expectations for the power uprates are met. Earlier this year the Commission approved my policy memorandum on power uprates and instructed the staff to give high priority to power uprates and allocate appropriate resources to streamline the NRC power uprate review process to ensure that it is conducted in the most effective and efficient manner. All of these and most of the other regulatory improvements conform to the Commission's decision to streamline our processes to focus attention on real safety.

In 1997, I spoke about the importance of license renewal to the stability and economics of electricity generation in the United States. I stated that license renewal must become a reality for a significant part of the U.S. nuclear fleet prior to any further developments, including new orders. I am sticking by my views and note that it is becoming a reality. Nuclear power plants, whose licenses are extended by formal regulatory approval, are essential to maintaining the large infrastructure needed for the effective development of nuclear power and, I believe, for the energy security of the United States.

I would like to share with you my simple recipe for achieving predictability and fairness in nuclear regulation and everything nuclear:

be disciplined
be meaningful
be scrutable

and good things will happen. This applies to everyone.

I have been addressing predictability, now let me discuss the need for balance. Predictability and balance is the name of this talk. To achieve balance, the processes must be disciplined, be meaningful and be scrutable. This is applicable across the board, including the protection of the national electrical supply and its assets, and the protection of public health and safety. In our arena, both the NRC and licensees must balance the need for security at nuclear power plants with the other safety needs at these facilities. Balanced efforts in the area of physical security and safety by the industry and the NRC have been successful and demonstrate our security capability.

Let me conclude by restating that there have been no credible threats to any nuclear facility in this country but, even if there is a terrorist attack on a nuclear facility, I believe that America has, and will deliver, the necessary responses to protect public health and safety. September 11 is a reality, a reality that we are now facing and will continue to face. It is also a reality that nuclear power plants are vital to the energy security of this country and the well-being of its people.

Nuclear Power Generation
Development Scenario

	1973 - 1982	2001
Interest Rates	High & Unstable	Low
Inflation	High & Unstable	Low & Stable
Electrical Demand	Decreasing	Increasing
Socio-political Climate	Negative	Improving
Technical Maturity	Low	High
Regulatory Framework	Low Predictability	Improved
Economical Performance	Poor & Unstable	Good & Improving
Environmental Image	Poor	Improving
Safety Image	Poor	Good & Improving
Expectations	Too High	Realistic
Competition/Deregulation	None	High
Standard (certified) Designs	None	Three +
Combined License	No	Yes
Important to National Security	Yes	Yes
Financial Risk	High	?
Public Credibility	Low	Improving
Bottom Line	**Low Predictability**	**Good Predictability**

Table 1