



# NRC NEWS

**U.S. NUCLEAR REGULATORY COMMISSION**

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Nuclear Power Outlook 2004**

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U.S. Nuclear Regulatory Commission**

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The development and financing of new nuclear projects is highly dependent on the status of that most sought after quality in the nuclear business: predictability. It would amaze the uninformed how this sector cherishes predictability, risk-avoidance -- in the good sense of the word, as I will explain below -- and everything you can throw in to reduce uncertainty. Risk-avoidance in the content of nuclear operations is not an oxymoron, but an everyday reality. In fact, it is at the very core of all you do, and for very good reasons.

One way we have dealt with risk-avoidance and assurance of adequate protection at the NRC is by using "tried and true" approaches to safety; I am referring to defense-in-depth. However, today's defense-in depth no longer includes just an array of structures, systems, and components capable of performing the intended safety function; it has become broader in philosophy and in practice, as it incorporates the design, engineering, and operating experience, and is complemented by risk-informed and performance-based decision making. For the past few months, I have been emphasizing that "the big" three interrelated components of defense-in-depth, on which the NRC and our licensees depend for adequate assurance, are safety, security, and emergency preparedness; all three are essential components of predictability.

Predictable safety performance and a predictable regulatory framework are interconnected, and often synergistic, obligations of the NRC. These we shall do well. Predictable everything else is for the rest of you mortals out there. Let me touch on the "everything else" you worry about before I turn to the NRC's responsibilities.

Shown in Table 1 are some of the key components of predictability, outside of regulation, that are important to the development of nuclear power generation. From these alone, it could be surmised that the fundamentals are better now than they were 20, 10, or even 5 years ago. However, these are

only a part, albeit an important part, of the picture, given that market forces, supply/demand conditions, and other components contribute to the complexity of making a decision to initiate new construction. I am going to stay away from any conclusions in this regard since it is out of my bailiwick.

Regulatory predictability, however, is not. I would like to state categorically that regulatory predictability is higher now than it has ever been. The NRC has an obligation to assure all stakeholders that our processes are predictable. Shown in Table 2 is a summary of those key regulatory issues that have changed over the years. There is no doubt that there have been significant improvements in the predictability of NRC's processes; indeed, there has been a major shift in emphasis so that now our resources are placed on safety-focused licensing and regulation.

No longer is compliance the "be all" of regulation nor of licensees' performance. Compliance is necessary but it is no longer the primary driver -- safety is. I cannot overemphasize the importance of this shift. In fact, I believe it underpins the proposed new Commission strategic goal: "to enable the use and management of radioactive materials and nuclear fuels for beneficial civilian uses." Priority is now placed on what should be done better rather than what was done wrong. This enabling includes all the provisos established by law.

The broad and deep improvements in regulatory predictability were accompanied, and at times preceded, by licensees' safety improvements. I have no hesitation in stating that safety performance is a requirement for predictability in every aspect of the nuclear sector. Safety performance has to be actively managed, with a consistent commitment to safety, supported by the application of technical know-how where and when it is needed.

Looking back at some of the major improvements in regulatory predictability that would be of interest to this conference, I believe that the issuance and proposed changes to 10 CFR Part 52 stand out as critical for the development of new nuclear projects. 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 Part 52 is the pathway for potential licensing success of certified or certifiable new reactor applications. First, it exists -- not a minor issue. Second, 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 paths without compromising safety.

In the Statement of Consideration for Part 52, the Commission stated that the intent of the regulation was to achieve the **early** resolution of licensing issues and **enhance** the safety and reliability of nuclear power plants. The Commission sought nuclear power plant standardization and the enhanced safety and licensing reform which standardization could make possible. In particular, the Part 52 process provides for the early resolution of safety and environmental issues in licensing proceedings. The Statement of Considerations for Part 52 goes on to say: "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."

In other words, it depends on safety and the "everything else" I mentioned earlier.

The Commission has directed the staff to improve our capabilities to conduct licensing and inspection activities associated with early site permit applications and for combined license application for new power plants. In addition, the Commission directed the staff to critically assess the regulatory infrastructure supporting both 10 CFR Parts 50 and 52, with particular emphasis on early identification of regulatory issues and potential process improvements. The focus of these efforts is to ensure that the NRC is ready for potential applications for early site permits and new nuclear power plants, as well as certified designs or designs to be certified. The Commission worked to make sure that the NRC processes do not become an unnecessary impediment should society decide that additional nuclear plants are needed to meet the energy demands of the country. The framework was clear: necessary safety-focused regulations, yes; unnecessary, not safety-focused regulations, no. I am pleased to tell you that most of this work is done, and I am satisfied we have the necessary elements for a successful review process.

I realize the significance that these undertakings could have for the well-being of the United States of America, and I know what my responsibilities are. These responsibilities are stated clearly by the U.S. Nuclear Regulatory Commission's mandate to protect the common defense and security, to protect public health and safety, and to protect the environment by the licensing and regulation of the peaceful uses of atomic energy. I firmly believe this mandate is going to endure the test of time because it is good and because it is balanced. The NRC is ready to execute its responsibilities in these areas and is ready to improve, wherever needed.

As we face the regulatory challenges that are sure to be posed by the certification and licensing of new designs, a series of familiar requirements will have to be met, regardless of the licensing path chosen:

- Public Involvement
- Safety Review
- Independent Review by the Advisory Committee on Reactor Safeguards
- Environmental Review
- Public Hearing
- NRC Oversight

Each and every one of these are key to an effective and efficient licensing process. But I would be remiss if I did not address the issue of public hearings in particular since they have a major role in the predictability of the licensing of new nuclear power plants.

Licensing requires the expert resolution of the pertinent technical and legal issues, and when appropriate, adjudication. There is no doubt that technical definition, clarity of analyses, and timeliness are essential to resolving the technical and legal issues always present at the leading edge of licensing. Everyone benefits by crisp processes. And there is no doubt that the Nation is served best when adjudication uses the same principles. The NRC adjudicatory processes are a true exercise of democracy's checks and balances, and it is our obligation to make sure they are conducted in a manner that serves the Nation's needs by achieving sound and timely decisions, without rushing them or delaying them.

The ultimate purpose of adjudication is to reach a decision on a matter under dispute. I hear loudly and clearly the concerns of the industry and other stakeholders regarding fair and equitable

adjudication processes, and I emphasize fair and equitable. I am committed, and I am certain my fellow Commissioners are also, to continuing the improvements of the processes for resolving technical and legal regulatory issues, including adjudication, in a manner conducive to sound and timely decision-making, with the full protection our laws afford to the parties to the process. This is as true for the simple as it is for the more complicated matters, from a narrow license amendment to an adjudication for a potential license application for Yucca Mountain.

In multiple ways, the Commission has been working to ensure discipline in the adjudicatory process. For example, in the past few years the Commission has successfully set milestones for advancing the adjudication of license renewal cases. In addition, in 1998, the Commission clarified the issues and streamlined the process for hearings on license transfer applications. Just three weeks ago (November 13, 2003), the Commission approved a final rule, which should be published soon in the *Federal Register*, that substantially modifies the NRC's rules for the conduct of adjudicatory hearings to enhance their effectiveness and efficiency, consistent with the goals of assuring fairness and accessibility for all interested parties. On the same day, the Commission took the unusual and apparently unprecedented step in the Private Fuel Storage case of allowing and demanding early appeals of Licensing Board decisions that otherwise could not be appealed until the conclusion of the proceeding before the Board. Adjudication by the NRC must be usable but not abusable.

I believe it is also appropriate to consider adjudication within the framework of regulation. Regulation is a tool of society to implement what society needs, in an orderly, fair, and equitable manner. The combination of a democratic society and a free market provides the most powerful combination for achieving fairness, equity, and the protection of rights, property, health and safety. We sometimes take this for granted, but we should not.

Besides licensing, there are other elements in the composite picture of regulatory predictability that are important for the consideration of new nuclear plants. To these, I can talk with great confidence: we have assurance of protection of public health and safety by any reasonable standard of radiological protection; we have brought physical security to an appropriate level for today's needs; and we continue to maintain, even while improving, effective emergency preparedness. Let me summarize the results of over 40 years of U.S. commercial power reactor operation: no member of the U.S. public has been injured from the operation of, or from events or accidents at, nuclear power plants. No one. The 103 nuclear power plants currently in operation in the U.S., and those now shut down, have been operated by our licensees in a manner that has protected the public from radiological hazards that could affect their health. This does not mean that we have had no problems or that sound safety management can be taken for granted, as the event at Davis-Besse shows. On the contrary, it means that vigilance is necessary to ensure that this safety record is preserved.

We now have new and powerful regulatory tools for ensuring safety during our design certification reviews and our early site permit reviews, tools that help bring consistency and predictability to the regulatory process. I am referring, of course, to Risk-Informed and Performance-Based regulation, two safety concepts which separately or in synergistic combination allow all of us, in fact force all of us, to focus our attention on those activities most directly associated with safe operation and protection of the public. Enormous progress has taken place in the application of Probabilistic Risk Assessment in the past thirty years. The technology that was only in its formative stage in 1973 is now a major force in the nuclear industry: providing the foundation for the new Reactor Oversight process, influencing every rulemaking activity, informing license amendments, and

dominating the maintenance planning process. I am convinced that predictable, effective, and efficient nuclear regulatory infrastructure for the United States of America has to include risk-informed and performance-based elements from the design basis forward.

I once said that for the nuclear power sector: “there is no credible industry without a credible regulator, and there is no credible regulator without a credible industry.” I will add to it that: “there is no predictable industry without a predictable regulator, and there is no predictable regulator without a predictable industry.” In other words, the burden for predictable performance is broadly distributed.