NRC NEWS

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"NEW PLANT DESIGN, CERTIFICATION AND LICENSING"

Remarks as Prepared for Delivery
Chairman Nils J. Diaz
U.S. Nuclear Regulatory Commission
at the
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Good morning. Thank you for the kind introduction, and thanks to Platts for the opportunity to present my views on "Nuclear Energy: Opportunities for Growth and Investment in North America." Indeed, it is a pleasure to be here today, at a time when our nation, and many other nations, have to address national security, energy security, and economic security holistically, and when nuclear energy generation is being seriously considered as one of the solutions. It is always a challenge to speak first at a large meeting dealing with a broad range of dynamic issues, including sociopolitical, financial, economic, energy security, and, yes, regulatory issues, every one of them important to the potential growth and utilization of nuclear energy. However, I noticed, with pleasure, that Secretary Bodman will be speaking right after me. This is a unique opportunity for me to offer short, polite, bland remarks and pass the buck to Secretary Bodman. I would probably get away with it too. But I won't do it.

I believe that safe, reliable, and secure nuclear energy has been and can continue to be part of the solution to energy security and environmental stewardship, and thus contribute to the well-being of our people. I also believe that this next time around, nuclear power plant deployment should be carefully planned and key issues and interfaces resolved at the front end, executed on budget and on schedule, with all the safety and engineering know-how developed and learned over the last 25 years. The development, review, and potential deployment of reactors must contain all the safety checks and balances required by the law and demanded by the need to ensure the protection and security of our people.

The Nuclear Regulatory Commission has new and difficult issues to resolve in a short period of time to discharge well our licensing responsibilities, while not missing a step in our continuing safety oversight of nuclear facilities and materials. We realize the full scope of our responsibilities, are facing them with all our resources, and plan to do them well, and do them openly. Therefore, I must today answer broad questions for a broad audience.

First, where does the Commission stand overall? This Commission clearly, deliberately, and openly set the objective that governs our activities. The Commission stated in its Strategic Plan that the NRC's objective 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.

From my vantage point, I can tell you that the NRC is true to this objective, and the agency will continue to be true to it. To further this objective, we continue to improve the organization, to prioritize, manage, and use resources well, and to revisit and create ways to better implement every major agency function. I believe the agency has achieved and continues to achieve results that leave no doubt of the agency-wide commitment to the objective of enabling the beneficial uses of nuclear energy, within the proven and improving safety framework for which we are responsible, in an effective, efficient, realistic, and timely manner. In fact, we have the record to prove it, and any occasional mistake or deficiency becomes obvious because it is the exception to the rule. And when such a mistake occurs, we take care of it.

Therefore, I do get concerned when I hear and read about perceptions of NRC "regulatory instability" or "lack of regulatory predictability." I want to be completely clear on this: the Nuclear Regulatory Commission is a regulatory agency with a high degree of predictability for a given set of circumstances. But we are not miracle workers; the agency will work well, and better, when we have high quality inputs and, correspondingly, well-defined processes, tasks, and schedules. Obviously, a multitude of circumstances will define the playing field.

A lot of the buzz centers around the predictability of outcomes from the use of 10 CFR Part 52, which contains the requirements for Early Site Permits; Standard Design Certifications; and Combined Licenses (COL) for Nuclear Power Plants. Outcomes depend on many factors, and one of the key factors is the quality of the application submitted. Timely outcomes also depend on the planning and processes that I will discuss today. It is true that the combined license component of Part 52 has not yet been used. Clearly, we now have experience with early site permits and extensive experience with design certifications. The reality is that the staff and the Commission also have extensive experience in performing the critical elements of a COL review. We have learned much from these experiences, which include safety evaluations, environmental impact assessments, ACRS reviews, public interactions, Federal/State/local interactions, and public hearings.

The primary purpose for establishing the new Part 52 process for licensing nuclear power facilities was to encourage early resolution of issues to increase regulatory predictability in advance of major financial commitments, while maintaining the requisite safety reviews. Yet, questions are frequently asked about whether the use of Part 52 will provide regulatory predictability at the COL stage. I believe that some are questioning the regulatory predictability for new reactors mainly because of two particular aspects of this new Part 52: the mandatory hearing that must precede a decision to issue a COL and the potential for a second hearing prior to fuel loading. The NRC is established with an adjudicatory Board consisting of legal and technical members, with the capability and legal authority to conduct hearings and rigorous reviews of alleged deficiencies in applications. Although the agency has not processed a COL application and therefore has not been through a

hearing for these aspects of the Part 52 process, the Commission and its Atomic Safety and Licensing Board have extensive experience with licensing and with adjudications for various types of facilities. Recently, we have been conducting mandatory hearing proceedings, and, for the most part, they have proceeded in an organized and timely fashion. It is noteworthy that Atomic Safety and Licensing Board and Commission decisions have consistently been upheld when challenged in courts of appeals and the Supreme Court.

Moreover, this Commission has a record that stands out in assuring that adjudication is fair and equitable, as well as effective and efficient. In 1998 we issued a Policy Statement on conduct of our hearings that set the stage for efficient conduct of proceedings on license renewals and license transfers. We followed that statement with a revision of our rules of practice to improve the accessibility, effectiveness, and efficiency of the hearing process. The Commission has provided model schedules to guide our Boards and expedite adjudicatory proceedings for both pending and future proceedings. It has also required the participants to comply with NRC procedural rules. Litigating COL adjudicatory proceedings will undoubtedly present new possibilities for promoting both effective and efficient resolution of issues, particularly with respect to common issues. For example, for cases proceeding in parallel, a party may seek, or a Board may convene, separate Licensing Boards to resolve discrete, common issues in a consistent fashion and in parallel with the resolution of other issues. The point here: A final decision on an issue that is common to a number of cases can become precedent setting, potentially reducing the need to revisit it in future cases. Thorough and sound work by all involved when issues are first presented will be key to take advantage of these potential efficiencies.

Let me briefly address the potential for a second hearing. The threshold for granting such a hearing is high. If a plant is built in accordance with the license, then the Commission has the capability, and in fact the obligation and the responsibility, to allow the plant to operate. If a hearing is granted, operation may be permitted for an interim period while the hearing is conducted. Part 52 provides criteria and procedures under which the Commission must and will ensure that no frivolous means are used to create a second hearing. However, the responsibility rests squarely on the applicants to maintain a complete and accurate record, showing that the facility is constructed and will be operated in accordance with the license, to allow the NRC to confidently make the necessary findings.

A couple of personal comments. I do not mind when the NRC is called demanding on safety, exacting and driven on security and emergency preparedness, intrusive on oversight; or to the contrary not sufficiently demanding in these areas. If I do not know the answer to any of these challenges, I will check and probe to make sure we are where we should be pursuant to the law and Commission policy, but I don't mind being questioned. But unpredictable? No way.

When we talk about predictability for licensing new reactors, I believe that we need to talk about "overall predictability," not only NRC's. Predictability begins when an applicant starts to consider an application, and extends through licensing, construction, and operation of the facility. With the present projected schedules, and the need to establish the requisite infrastructure to meet those demanding schedules, resolving significant issues at the front end becomes very important. The industry and the NRC can and should do much better than in the 70's and 80's. Having said that, let me just emphasize that predictability in reactor licensing is everybody's business; and the NRC accepts its share of the responsibility. I will now turn to how the NRC is addressing, predictably, the issue of new reactor licensing and our internal and external expectations.

The Commission just approved a proposal to revise 10 CFR Part 52 to clarify it and enhance its usability. I know that the proposed changes to Part 52 are extensive, and it has been argued that some of these are marginally beneficial. However, we can benefit from a better and clearer Part 52 that would facilitate the upcoming safety reviews for new plants. I encourage all stakeholders to submit their comments on the proposed rule early so that the staff can finish its work on this rulemaking in October 2006 and the Commission can make its decision. What we need to do at this point is to get this rulemaking done.

One of the planned activities for new reactor licensing is in the area of security. The NRC has three important security rulemakings planned or underway to codify security requirements for power reactors. The first is the rulemaking on the design basis threat for radiological sabotage. The proposed rule is currently out for public comment and a final rule will be issued later this year. The second rulemaking will amend the power reactor security regulations in 10 CFR 73.55, 73.56, 73.57, and Part 73 appendices to align them with the series of orders the Commission issued following September 11, 2001, and to ensure safety-security interface issues are properly considered in plant operations. The Commission intends to finalize this rule as early in calendar year 2007 as possible. Finally, the Commission's expectations on security design for new reactor licensing activities are to be codified in a third rulemaking by September 2007. The expectation of the Commission is that the lessons learned by the agency and reactor licensees pre- and post-9/11/2001 should be considered by the vendors at the design stage. We have learned much and I believe improvements can be realized without major design or construction changes.

To set the stage for my next set of comments, I would like to discuss where potential applicants are today, in the dynamic front of new reactor applications. To date, 11 potential COL applications have been publicly announced, distributed among the 3 major reactor vendors now competing for the U.S. marketplace. Nine months to a year represents a schedule for completion of any contested proceeding, which begins early in the staff review process, as well as the mandatory hearing, which follows completion of the staff's review.

In order to effectively review multiple COL applications in parallel, the staff is now preparing to implement a design-centered approach for NRC's reviews of COL applications, to the extent possible, for as many issues as possible. This approach involves the use, for each issue, of one review and one position for multiple applications. It could also be called the "one-for-all" approach. It is ready for use now; however, it needs the nuclear industry's commitment. One-for-all is one thorough, comprehensive NRC safety evaluation to be used repeatedly, as appropriate. Although the U.S. nuclear industry has not necessarily been endowed with "oneness," the one-for-all approach might not be too bad for those who plan to apply for COLs. Using the design-centered approach, the NRC staff would use a single technical evaluation to support multiple combined license applications for the same technical area of review, as long as the applications standardize the licensing basis to a level that would make this approach viable. For technical review areas amenable to this approach, the staff can complete the evaluation for a "reference" case, can determine if the design proposed by other applicants is the same as the design reviewed, and proceed to issue the evaluation, without further review. Let me emphasize, again, that standardization is key for this approach to work; in fact, the term "oneness" comes to mind.

The design-centered approach could also be applied to parallel reviews of a design certification application and COL applications referencing the design. For example, NRC reviews for the ESBWR and the EPR designs are likely to be conducted in parallel with reviews of the first few COL

applications referencing these designs. The NRC could proceed with its review of each design and issue a safety evaluation report with open items, just as was done in the case of the AP1000 and earlier designs. Using the design-centered approach, the resolution of generic open items in the NRC safety evaluation report could be coordinated among the vendor and the applicants for COLs referencing the vendor's design. The resolution of these generic issues could then be incorporated into the design and included in the rulemaking certifying the design. In this manner, they would be available to future applicants referencing the design.

I believe that applying the design-centered approach to parallel design certification and COL reviews, and relying on disciplined standardization, will result in a better, more detailed, and more thorough safety evaluation for each design. When an applicant references a standard design certified by rulemaking, all design matters within the scope of the design certification rule have been resolved using a fair and equitable process and need not be re-addressed in the COL proceeding. The design-centered approach could also lead to a significantly higher level of efficiency in the licensing process thereby reducing the amount of staff resources necessary to conduct each review. We will continue to review our funding needs to determine what is necessary to carry out our responsibilities.

Furthermore, in the Part 52 rulemaking the Commission is soliciting comments on an approach that would facilitate amendments to design certification rules after completion of the initial certification. With such a provision, a detailed standard certified design would be able to incorporate additional features that are generic to the design. NRC will be predictably more efficient if industry adopts a standardized approach.

Let me now use the AP1000 to show how a more detailed Design Certification Rule could be beneficial to COL applicants, the NRC, and public participants. The present AP1000 Certified Design does not include specific design details in a few important areas, such as instrumentation and control systems, and control room and piping designs. This was done to allow utilization of the rapidly changing technologies in advanced designs; these areas are currently addressed by Design Acceptance Criteria. The Design Acceptance Criteria are a special set of inspections, tests, analyses, and acceptance criteria to be used at the COL stage to ensure that specific designs meet applicable regulatory requirements. Since specific design details for these areas were not included in the AP1000 rulemaking, they would have to be addressed by each COL application and potentially each COL hearing. Again, I believe that if proposals to address these areas were to be standardized to the extent practicable, their review could be conducted once in the context of an amendment to the Design Certification Rule to codify a design that the NRC has found acceptable. The rulemaking could be conducted prior to or in parallel with the review of the "reference" COL application and completed prior to adjudication on the "reference" COL.

Amendments to Design Certification Rules and implementation of the design-centered approach are consistent with the goal of standardization and the safety benefits associated with such standardization, as envisioned by the developers of Part 52 and the Congress of the United States. It is also consistent with the U.S. Department of Energy 2010 Initiative, which is centered on standardization.

Clearly, I am extolling the predictability and benefits of standardization, including increased resolution and closure of design safety issues. I know that utility executives that have expressed an interest in applying for a COL are also seriously interested in standardization. I also note that

rulemaking affords the benefit of broad public participation and allows interested parties to focus on particular areas of concern.

Could it be done differently? Of course it could, and the law clearly says so. The NRC has the obligation to conduct licensing reviews in the different manners outlined in Part 52, if requested by applicants, and to do so as effectively as possible. However, considering the number of potential applications for new plants that are expected to use the AP1000, the ESBWR, and the EPR, there is much appeal in an approach that resolves specific design details for all important areas early in the process. I also believe that early resolution of environmental issues and emergency preparedness, prior to submittal of the COL application, could be beneficial to the timely completion of COL reviews. For example, this combination, with a design-centered approach, could shorten NRC's review schedule by about one year. Regardless, the agency needs to be prepared to act on multiple applications using several designs in a timely manner, using the provisions of Part 52. Once we have reviewed multiple applications, and new applications have been standardized, I believe that it may be possible for the NRC to complete the reviews, including the hearings, in approximately 24 months.

In another world, in another time, it might be different. But, here and now, the path forward for nuclear power safety, predictability, and growth seems clear: standardization. The benefits of detailed certified standard designs, early site permits or equivalent with much use of generic-to-a-design environmental impact statements, and standard COLs should be seriously considered.

What is my major concern today regarding a predictable schedule for new reactor licensing? It is if and when the NRC will receive a complete, high quality COL application.

In summary, the sociopolitical, financial, economic, technical, and regulatory framework for reactors in this country has changed dramatically since the last plants were designed, licensed, and built. This is the twenty-first century, and I can assure you that the NRC is much better at doing what it must do. Many of the old assumptions are no longer valid. The NRC is continuing to forge a new licensing and regulatory framework for today, for tomorrow, and for the future. The Commission and the staff of the NRC are meeting the challenge, indeed the demand, to do our job well. I am proud of the people I work with day-in and day-out, and their dedication to the safety, security, and the well being of the people of our country, indeed proud of the strength and stability of the institution we have forged together.