STATEMENT SUBMITTED

BY THE

UNITED STATES NUCLEAR REGULATORY COMMISSION

TO THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

UNITED STATES SENATE

CONCERNING

NUCLEAR POWER 2010 INITIATIVE -

NEW NUCLEAR POWER GENERATION

IN THE UNITED STATES

PRESENTED BY

DR. NILS J. DIAZ

CHAIRMAN

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Introduction

Thank you, Mr. Chairman and members of the Committee. It is a pleasure to appear before you as you consider "Nuclear Power 2010 - New Nuclear Power Generation in the United States." My testimony today on behalf of the Commission will focus on actions the Commission has taken and is taking to ensure the continued safe and secure uses of nuclear technology and to provide a stable, efficient, and predictable framework for licensing and regulation of the civilian uses of nuclear materials. In particular, I will address actions relating to early site permits, design certification, and combined license applications for new reactors.

The U.S. Nuclear Regulatory Commission (NRC) is dedicated to the mission mandated by Congress - - to ensure adequate protection of public health and safety, common defense and security, and the environment - - in the application of nuclear technology for civilian use. In carrying out this mission, the Commission is mindful of the need to enhance safety, security, and regulatory predictability, when appropriate and justified. We take very seriously our commitment to enable the safe and secure beneficial use of nuclear power.

Regulatory Framework for New Reactor Licensing

The NRC is prepared to discharge its responsibilities regarding licensing of new nuclear power plants, though enhancements and resources are continually being assessed. In 1989, the NRC instituted a new combined construction/operating license process through the promulgation of 10 CFR Part 52, as an alternative to the separate construction and operating licensing steps specified in 10 CFR Part 50. The process was later addressed by Congress in the Energy Policy Act of 1992. The Part 52 licensing process is designed to resolve safety and

environmental issues, including emergency preparedness and siting issues, early in the process and, thus, to provide a more stable, efficient, and predictable regulatory framework for utilities that might wish to pursue a new reactor license.

Part 52 established three new components of our licensing structure - - design certification, early site permit, and combined operating license. First, NRC developed a standard design certification process by which the NRC extensively reviews a proposed reactor design and then, if appropriate, approves the design through public rulemaking. The Commission has already certified three new reactor designs and codified them in the regulations, making them available for new plant orders. The proposed design certification rule for a fourth design was recently published for public comment. The NRC is also prepared to receive a fifth design certification application in the summer of 2005. As a result of experience gained during previous design certification reviews and to promote additional regulatory effectiveness, the NRC encourages early communication with potential applicants to identify unique design features or challenging licensing issues through the pre-application process. Currently, the NRC is engaged in conducting pre-design review or preliminary review discussions on six additional reactor designs, so we could receive several more design certification applications in the near future. I cannot stress enough the need for applicants to provide complete and high quality technical information.

The NRC also established a process for obtaining an early site permit, which allows applicants to seek approval of sites for new reactor units separate from an application for a construction permit or combined construction/operating license. By obtaining an early site permit, applicants can resolve site-related issues, including certain environmental issues, before the early site permit is issued. The NRC received three early site permit applications in

late 2003 for sites at which operating reactors already exist in Virginia, Illinois, and Mississippi. Schedules are in place to complete the safety reviews and environmental impact statements in approximately two years from the date of an application. In fact, the NRC staff has already issued draft safety evaluation reports on all three early site permit applications. Also, draft environmental impact statements for two of the three early site permit applications have been issued for public comment. The NRC staff is currently reviewing the public comments received on these documents. The mandatory adjudicatory hearings associated with the early site permits are currently ongoing; conclusion of these hearings is, in part, dependent upon completion of all associated staff reviews. While I am pleased to be able to provide this information on the status of the reviews of the three early site permit applications, the Commission serves in an adjudicatory capacity in reviews of our Licensing Board's decisions and, thus, it would be inappropriate for me to address substantive issues associated with the resolution of these early site permit proceedings.

Finally, Part 52 provides for a combined construction/operating license process which allows applicants to seek, in a single application, a license authorizing both construction and operation. This leads to combining adjudication of licensing issues in one hearing, instead of the two hearings that have attended the licensing process utilized previously. Furthermore, the efficiency of NRC's safety-focused reviews would be substantially increased if applicants utilize an early site permit and certified design in their combined license applications. We believe this process will provide the needed stability and predictability in licensing reviews for new nuclear power plants, key components of which have been, or are being, demonstrated by the new reactor design certifications and the ongoing work on the early site permit applications. The NRC is working to clarify and refine the 10 CFR Part 52 licensing process further in order to

incorporate recent experience gained from design certification reviews, current early site permit reviews, discussions with nuclear industry representatives, and input from the public. I am convinced that these measures, individually and in combination, are providing a means to enhance safety for nuclear power generation in the future.

License renewal for existing operating reactors provides another example of how the NRC has sharpened the safety focus of its licensing process. The NRC has received license renewal applications for 48 reactor units and has approved 20-year extensions for 30 reactor units; an additional application covering two reactor units was recently returned to a licensee as unacceptable for docketing. These reviews have been consistently completed in a timely fashion, meeting the NRC's schedule of 22 months for completing a review without a hearing request and 30 months when a hearing is requested. NRC is using experience gained from the license renewal process to improve the efficiency of Part 52 combined license application reviews. The agency is committed to a continuing holistic improvement of our regulatory review processes, with a sharpened focus on matters important to safety. This has been well demonstrated by the use of disciplined review processes in many licensing activities, including the review of applications for license renewals and for power uprates. Our experience to date is that an application that is complete, of high technical quality, and responsive to staff questions has a direct impact on the NRC's ability to make the appropriate safety determinations, meet our review schedules, and stay within resource estimates.

The Commission has also worked actively to ensure that its adjudicatory proceedings are conducted in a fair, effective, and disciplined manner, now and in the future. For example, the Commission revised its rules of practice for agency adjudication early last year and has just published a final rule that adopts model milestones for presiding officers to use in scheduling

and managing hearings. The Commission continues to exercise oversight of the adjudicatory process.

New Reactor Construction

Licensing of new reactors requires a revised approach for inspecting new reactors during construction and pre-operational testing. Key challenges include establishing a state-of-the-art construction inspection framework; ensuring that safety is built into each phase, whether it be design, construction, or operation; ensuring the availability of an adequate number of qualified inspection personnel; ensuring that appropriate information systems are in place to efficiently and effectively perform the necessary inspections, tests, analyses, and acceptance criteria verifications; and responding to the anticipated use of multi-national modular construction techniques.

The industry is presently considering the construction of new plants in a modular fashion, with many of the modules fabricated at locations away from the plant site, including facilities located abroad. The industry's estimate for completing construction varies by plant design, but has been in the range of about 60 months and could be decreasing as new modular techniques are added.

The NRC is paying special attention to human resource requirements, especially the need for the construction inspection staff to have the requisite combination of construction knowledge and inspection skills. The NRC is utilizing the know-how of our senior inspectors with construction experience and incorporating their insights and lessons learned into the

revised construction inspection program, procedures, and training. The NRC is actively revising its construction inspection program to provide an enhanced safety focus and ensure timely support to all phases of the license application and construction processes. We are working with industry and public stakeholders as we go through this revision process and are confident that our revised program will be well established and in place before new construction would begin.

Resources for the Expected Demand for New Reactor Licensing

The FY 2006 President's budget request includes $37 million for the NRC's continuing work on new reactor licensing, including review of the three early site permit applications, review of two standard design certification applications, and development and updating of the agency's regulatory structure to accommodate new, advanced reactor designs. The demand for new reactor licensing is now expected to grow more rapidly than previously anticipated and budgeted. These demands have been identified in response to the Department of Energy's Nuclear Power 2010 Program solicitations, industry letters, and press releases.

Although specific plans are not yet available from the industry, the NRC may be faced with a significant increase in its workload for new reactor licensing, including receipt of up to five combined license applications beginning in 2007-2008. To meet this expected increased demand, NRC would need to begin preparatory activities soon to accommodate such large growth. This includes ensuring a state-of-the-art regulatory framework and conducting associated technical activities, obtaining sufficient NRC staff and contractors in the relevant disciplines, securing space, developing and conducting training, and putting in place the

appropriate organizational structure that would allow timely completion of the newly anticipated work. The NRC will also have to assess how to manage such a workload in light of other high priority activities, such as security and fuel cycle work. In short, NRC must determine the additional substantial resources for nuclear reactor licensing that will be needed to fully support the Nuclear Power 2010 initiative.

Summary

The Commission is dedicated to enabling the safe and secure use and management of radioactive materials and nuclear technology for beneficial civilian purposes. To that end, the Commission is fully committed to making sure that our agency is ready to meet the expected demand for new reactor licensing. The Commission believes the agency is prepared to accept and process applications in accordance with the applicable laws and regulations, continuing to focus on safety and utilizing risk-informed and performance-based regulation as appropriate. The NRC's Part 52 processes are safety-focused and should be stable, efficient, and predictable. We are also addressing our challenges. These include ensuring a strong regulatory and oversight framework; meeting the NRC's resource needs associated with the potential for receiving multiple combined license applications; establishing our technical and legal staff and contractor requirements early; and seeking additional funding as needed. We will continue to work with stakeholders to address issues associated with implementation of our licensing process. The Commission has benefitted from strong Congressional oversight, and we will continue to keep Congress informed about the impact of new reactor activities on the NRC.

I appreciate the opportunity to appear before you today, and I welcome your comments and questions.