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REMARKS OF
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# "NRC After 25 Years: New Regulatory Initiatives - Enduring Fundamental Mission"

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## Overview

Good afternoon. I am pleased to be able to meet with you today and to share some thoughts on NRC's regulatory activities - where we are now, and where we are headed in the future. This is an especially appropriate forum in which to address these issues and I thank Sam Collins and his staff for hosting this important event.

I note that tomorrow is the 21st anniversary of the Three Mile Island Unit 2 accident, an event which resulted in a multitude of studies, safety reviews, regulatory reforms, industry initiatives, and new regulations. As you all well know, the TMI event stimulated a decade of reform. I think that we are in a similar period of change now. Fortunately, the NRC's current efforts are not the result of an event like TMI, but rather grow from the desire to achieve greater credibility, effectiveness, and efficiency as a regulator. There is no better time than now to emphasize the importance of clear and open dialogue with all stakeholders on the initiatives we are undertaking and their potential impact. I suspect that our approach to regulation and the ways in which it may change in the future are of interest to all of you. In return, your feedback is an essential ingredient to successful regulatory reform.

During my swearing-in ceremony as the Chairman of the NRC, I stated that I believed the NRC was on the right track and that my task was to maintain the pace of change. But I also noted that great deal of work remained to be done. After five months as Chairman, I am firmly convinced that my assessment of the situation was accurate. We are headed in the right direction. I am even more aware, however, that the path ahead of us will be long and difficult. My aim today is to discuss a few aspects of the journey on which we are embarked.

## Enduring Fundamental Mission

I want to emphasize at the outset that the compass for our journey is well defined. NRC's fundamental mission and responsibilities are unaltered. The Atomic Energy Act of 1954 and the Energy Reorganization Act of 1974 established our obligation to regulate the Nation's civilian use of nuclear materials to ensure adequate protection of public health and safety, to promote the common defense and security, and to protect the environment. Today, that mission, and NRC's regulatory philosophy, remain unchanged. The NRC fundamental objective is to ensure that the health and safety of the public are protected. As always, the responsibility for safe operation of commercial nuclear power plants rests with our licensees. But the public expects that the NRC will be a strong and independent regulator as well. Although the means by which we seek to achieve our objective may be changing, our mission remains the same.

## The Environment for NRC's Reforms

The NRC initiatives that I will discuss with you today are not taking place in a vacuum; they are both a reflection of a changing external environment and a response to it. We are in a period of improved safety and operational effectiveness. While outliers exist, the overall safety performance of America's 103 operating commercial nuclear power plants is at an all-time high. The Institute of Nuclear Power Operations (INPO) recently released the results of a study of the

U.S. industry using the performance indicators of the World Association of Nuclear Operators (WANO). In every case, the median score achieved by the US plants on the WANO performance indicators over the last five years was an improvement over the performance of the previous five years. In the period from 1995 to 1999, the average number of automatic scrams was reduced from one scram per reactor per year to 0.5 scrams per reactor per year, a 50% reduction. In addition, between 1995 and 1999, collective occupational radiation exposure was reduced by over 30%. Moreover, 95% of the industry achieved the safety system performance goals established for the year 2000.

At the same time as this improvement in safety performance, there has been a parallel improvement in operational performance. According to the Nuclear Energy Institute (NEI), the nuclear industry's net generation for 1999 was 725 billion kilowatt-hours, an all-time generation record. Nuclear power plants in the United States operated with an overall capacity factor of 86.8 percent in 1999–an all-time record. U.S. nuclear power plants contribute approximately one-fifth of the total electricity generation in the nation, and, although 1999 generation statistics are still being tallied, the percentage of power generated by nuclear power during 1999 is expected to have increased over previous years. The data show that excellent safety performance in fact goes hand-in-hand with excellent economic performance.

While achieving these safety and operating performance milestones, reactor licensees are dealing with sweeping changes in the business environment in which they operate. Restructuring and consolidation in the industry, and deregulation of the price of electricity are new influences and could constitute potential distractions. No doubt these influences are having a significant impact on most of you and will continue to do so for the next several years. In the growing number of states in which the competitive market determines the price of electricity, profitability for all forms of electricity generation is dependent on achieving economically efficient operations. The NRC understands that there will be special pressures on our licensees to reduce costs and to operate as efficiently as possible. Our job is to ensure that these pressures do not become incentives to cut corners on safety.

The changed economic environment confronted by our licensees has also reinforced the obligation of the NRC to operate as efficiently as possible. The Commission recently proposed a Fiscal Year 2001 budget of 488.1 million dollars, the second lowest budget in the history of the agency in real terms. In recognition that some of our activities do not directly benefit NRC licensees -- such as our activities in overseeing Agreement States -- we are seeking over five years to phase in the recovery of 10 percent of our budget from general revenues rather than from licensee fees. The number of employees at the agency also continues to decline, and our budget reflects almost a 20% reduction in staff since Fiscal Year 1993. As I have testified before the Congress, the NRC is stretched thin, particularly in a time of regulatory change. But we have tried to respond to the fact that the cost of our activities is largely paid by our licensees.

In addition to achieving efficiencies in our activities, we have also sought to reduce unnecessary regulatory burden. I must emphasize the word "unnecessary." Regulation of any sort imposes a burden on our licensees; the challenge is to determine the appropriate degree of burden consistent with the fulfillment of our mission. To do this requires a careful approach in

developing and implementing regulatory initiatives to make sure that the costs are justified and that there are meaningful safety benefits.

In this context, let me discuss a few of our regulatory initiatives. Four of the most significant initiatives are the application of risk insights in regulatory revisions, reactor license renewal, license transfer programs, and the modification of the reactor oversight process. I will discuss each of these topics briefly. They will be covered in detail during various sessions of this conference.

Risk-Informed Regulation

We have embarked on a far-reaching program to develop and implement a risk-informed approach to nuclear power plant regulation. In fact, risk-informed regulation is now a fundamental theme for all of our regulatory activities. This approach uses risk insights, together with other information, to establish requirements that better focus licensee and regulatory attention on design and operational issues commensurate with their importance to public health and safety. In this way we seek to use risk insights as a means to augment and improve our traditional, deterministic approach to safety.

Let me give a few examples of the activities that are underway. We have initiated a program to evaluate the technical bases that underpin the requirements in 10 CFR Part 50 and to modify them to focus on safety-significant issues. The Commission has approved the staff's draft rulemaking plan for the modification of the scope of the special treatment regulations in 10 CFR Part 50. The plan proposes an alternative regulatory framework that will enable licensees to use a risk-informed process to categorize structures, systems, and components according to their safety significance, thereby enabling a more precise definition of the equipment that warrants heightened requirements. Other initiatives include the revision of the regulations or regulatory guidance governing decommissioning, fire protection, and reactor safeguards. More changes will come over time. In short, we are launched on a multi-year effort to rethink many of the fundamental underpinnings of the regulatory system reflected in Part 50.

Everyone should understand that risk-informed regulation is a double-edged sword. Some regulatory requirements may be relaxed or eliminated if a risk-informed assessment demonstrates that they have minimal impact on safety. However, new requirements may also be established if such an assessment shows that current requirements do not adequately address issues of substantial safety concern. For example, consideration of risk may show that equipment that has heretofore been seen as "non-safety related" in fact has safety significance. In such a case, strengthened requirements may be justified. In short, as a result of consideration of risk insights, some requirements may be reduced, while others are tightened.

We have already moved ahead with implementation of a number of risk-informed programs. We are receiving and reviewing a considerable number of risk-informed license amendment requests, and we have also seen wide interest in risk-informed in-service inspection programs. These are voluntary efforts, in the sense that we have established programs and processes for those licensees who choose to make use of them. I commend those of you who

have been involved in developing and piloting these processes. In many cases, you have invested resources that will benefit both the NRC and the industry.

License Renewal

Perhaps the most profound manifestation of change in the nuclear industry has been the sudden upsurge of interest in license renewal. A few years ago, many pundits predicted that the deregulation of electricity prices would cause so much financial pressure that a large percentage of operating nuclear plants would be forced to shut down before the end of their 40-year licenses. Despite these dire predictions, the NRC proceeded with the development of a process for renewal of operating plant licenses. Baltimore Gas and Electric stepped forward to make its Calvert Cliffs plant a so-called "test site" for the license renewal program. I am particularly pleased to inform you that we issued a renewed license to Calvert Cliffs last Thursday. The staff completed its work within 24 months, well within the target 30-month schedule. I view this entire process as a significant achievement, in particular the fact that the agency was able to establish a schedule and meet its milestones in a highly competent fashion. The Oconee license renewal is similarly on track for a Commission decision by this July.

I am confident that the industry considers the license renewal process a success as well because to date licensees have indicated an intention to submit 17 applications for renewal, comprising some 25 units, and many other licensees have expressed an interest in renewal. The same analysts who were predicting massive early shutdowns are now projecting that up to 85% of operating plants may ultimately apply for license extensions. Over the next several months, NRC will be assessing the lessons learned from the Calvert Cliffs review, and determining where we may be able to improve the license renewal review process.

License Transfer Programs

As you know, the restructuring of the industry has resulted in a large number of license transfer applications. I also believe that the NRC has an exemplary record in dealing with these complex license transfer cases. We were the first Federal regulator to analyze and act on the transfer of the Pilgrim operating license to Entergy Corporation from Boston Edison. We were among the first to approve the Three Mile Island Unit 1 transfer from GPU to Amergen, and we acted promptly on the Clinton transfer from Illinois Power to Amergen. These cases sometimes require a significant expenditure of talent and energy by our staff to insure a high quality and timely product. But we are seeking to process these applications expeditiously.

Revised Reactor Oversight Process

Perhaps the new initiative that will have the most direct impact on the day-to-day operations of our licensees is our new reactor oversight process. Over the years, the NRC has been widely criticized for its Systematic Assessment of Licensee Performance (or SALP) program. Licensees told us that the process was too subjective and too dependent on NRC inspectors' interpretation of inspection results. Other stakeholders complained that the "retrospective" aspect of SALP did not give an accurate and timely indication of current plant

performance. Our response to this criticism was to include the reactor inspection program within our ongoing self-assessment activities.

As a result, during the past three years, the NRC has developed a new integrated program that will provide more objective and timely evaluation of plant performance, with a focus on operational aspects with the highest safety significance. We have actively involved a broad spectrum of NRC managers and staff in this endeavor, and, in the spirit of improving the way in which we communicate with the public, we have sought input from our external stakeholders, including representatives of the nuclear industry, states, and public interest groups. I believe that the new oversight program we have developed, which was implemented on a pilot basis over the last year, will result in a significant improvement in our inspection activities.

The revised oversight process focuses inspection efforts on those areas that present the greatest risk. Performance indicators provide objective measures of operator and plant accomplishments and will be made available to the public, which should better enable the public to understand our assessment of the plants. The baseline inspection program will consider areas of safety significance that are not covered by performance indicators and will provide a fundamental examination of licensee performance. As you may know, a diverse panel that was formed to evaluate the pilot program concluded that, while there were still issues to be resolved and improvements to be made, the program should be implemented on an industry-wide basis. The initial implementation is to begin at all nuclear power plants in a few days. We recognize, however, that this is a work in progress, and we will have to make appropriate adjustments in the months ahead. There will no doubt be some problems but together with our stakeholders we will address them.

In my view, the new oversight process and the means by which it was established show the NRC's great progress -- the oversight process demonstrates by itself the NRC's focus on safety, our efforts to improve objectivity, our continuing commitment to stakeholder involvement, and our promise to improve transparency for the benefit of our licensees and the public.

Other Significant NRC Initiatives

External change is also stimulating significant NRC initiatives outside of the reactor arena. In the materials and nuclear waste areas, large challenges are also looming. For example, the agency continues to grapple with the problems associated with the regulation and licensing of a disposal site for high-level waste – a task that involves thorny technical, legal, social, and political issues. DOE is currently scheduled to submit a site recommendation on Yucca Mountain to the President in 2001, with a possible license application as early as 2002. If the President should decide to proceed with the Yucca Mountain project, the NRC will be obligated to review and decide on whether to issue a license to the Department of Energy. We are preparing for that eventuality. For example, in February, we provided comments on DOE's draft environmental impact statement. NRC is required to adopt the DOE Final Environmental Impact Statement, to the extent practicable, as part of NRC's licensing actions for the repository.

In the interim until a repository is available, we recognize that our licensees must have the capability to store spent fuel. As a result, we have continued to address the issues associated with dry cask and pool storage. The staff has revised its internal procedures, issued standard review plans, and made significant process improvements that should result in efficiencies in NRC's licensing, certification, and amendment processes for spent fuel storage either at or away from reactor sites and related transportation cask certification.

In addition, utilities are seeking new ways to satisfy the license termination rule while reducing decommissioning costs. This includes issues such as rubblization and partial site release. The staff will be challenged to consider new concepts under a performance-oriented approach while ensuring that radiological criteria are met. To facilitate these efforts, the NRC staff has been working with the industry and other stakeholders to develop guidance to implement the License Termination Rule.

Other materials-related activities of importance include the Commission's efforts to determine whether to initiate a rulemaking governing the release of solid material that is slightly contaminated with radioactivity. This activity has attracted a great deal of attention, in part because of a decision by the State of Tennessee to allow the release from a DOE facility of a large volume of recycled nickel that contained trace amounts of fission products. As you may be aware, DOE recently announced its decision not to release the nickel in order to await guidance from the NRC.

The Commission's decision on how to proceed, including whether to initiate a rulemaking, is highly controversial. The Commission recently directed the staff to request that the National Academy of Sciences conduct a study and provide recommendations on possible alternatives for release of slightly radioactive contaminated materials. The outcome of the NRC's efforts in this area will have important implications for all licensees.

It is also necessary and appropriate to apply in the materials context some of the lessons learned from the development of a risk-informed and performance-based approach to the regulation of reactors. We recognize that the characteristics of nuclear materials regulation differ in important respects from those relating to reactor regulation --- materials regulations are driven by exposure standards, as opposed to measures of facility damage; there is a far wider diversity of activities undertaken by materials licensees than by reactor licensees; materials activities are not dominated by a clear-cut risk feature, such as core damage; and operational risk, as opposed to accident risk, may be the central feature of the regulation of materials. Nonetheless, despite these differences, we believe the application of risk insights can and should be applied to materials regulation in the years ahead. As a result, you should anticipate reform in the materials arena that will parallel the activity in the reactor arena.

Public Confidence

Let me turn now to some of the ingredients for success in achieving change in both the reactor and materials arenas. First, it is essential that we maintain public confidence. To do our job effectively, we must involve the public on our processes and we must find ways to

communicate clearly with the public about how we do our job and how we come to our decisions. If we are successful, the resulting public trust and confidence will benefit not only the NRC, but also those whom we regulate. As I have stated repeatedly since becoming Chairman, NRC regulatory decisions must be fair and must be perceived to be fair. The NRC must approach all of its challenges in a manner that includes the affected stakeholders and the public in ways that are meaningful and that contribute to sound decisions.

I must note in this regard that achieving success presents a considerable challenge. On the one hand, the NRC must reach decisions expeditiously. We cannot become so ensnared in our regulatory processes that we fail to achieve timely resolution of the issues before us. We recognize that justice delayed is often justice denied. On the other hand, our full engagement with interested members of the public both provides valuable insights that can illuminate the path to sound decisions and serves to foster public confidence. Indeed, the public will probably reject decisions that are the product of processes from which the public is excluded. Because public involvement can cause delay, there is an obvious tension between the objectives of achieving timely decisions and assuring public participation. The Commission is reviewing its procedures in an effort to achieve a reconciliation of these competing objectives.

Research Program

Another essential ingredient for success in our regulatory initiatives is a sound research program. The Office of Research is a vital part of the NRC, and its work helps provide the technical bases for our activities. We could not hope to move forward with our efforts to risk inform our regulations without the NRC's developmental work in probabilistic risk assessment much of which has been performed or sponsored by NRC's Office of Research. This work began in the mid-70s with the landmark WASH-1400 study. Similarly, the work conducted by the Office of Research on plant aging provides insights essential for license renewal.

Our research program is currently gearing up to support new agency work in areas such as mixed-oxide and high-burnup fuel; to provide the basis for adoption of new technology, such as digital instrumentation and control systems; and to lay the foundation for our new risk-informed regulatory approaches and revised reactor oversight process. The thermal-hydraulics program, traditionally one of the centerpieces of our research, is using state-of-the-art techniques to develop new analytical tools and models that will remove excess conservatism from reactor safety analyses, while maintaining adequate margins.

In short, our regulatory initiatives would not be possible without the technical foundation offered by research activities. An important recent report on the NRC sponsored by the Center for Strategic and International Studies specifically identified the need for the NRC to strength its research programs so as to provide the technical underpinnings necessary for the agency to remain an effective regulator. This is an assessment with which I fully agree.

International Responsibilities

The NRC international program is another activity that provides an important underpinning for long-term success by our reactor and materials licensees. The recent incidents in Japan and Thailand remind us that a nuclear-related event anywhere in the world can cause heightened concern about nuclear enterprises everywhere. These incidents reinforce the need for the NRC to continue to work with counterparts abroad to advance nuclear safety throughout the globe. We benefit not only because domestic nuclear activities are linked in the public consciousness with activities elsewhere, but also because we gain knowledge from sharing experience and insights with our foreign colleagues. As a result, the NRC's international activities are an important aspect of our overall program.

## Conclusion

This has been a whirlwind tour through our many activities. The main theme, as I stated at the outset, is that the NRC is an organization that is in the midst of a period of immense change. We have taken some important steps to improve safety, to regulate efficiently, and to improve public confidence. But, if we are to be successful, we need your cooperation. Our effectiveness is ultimately dependent on assistance from our stakeholders -- both licensees and the general public -- in helping us to chart an appropriate course. It also relies upon the continued vigilance by our licensees in ensuring the safe operation of their facilities. Together we can reinforce and sustain this remarkable period of safe and efficient operation.

Thank you.