

**Remarks of  
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Commissioner  
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**at the**

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Good Morning. Thank you very much for the opportunity to speak to you today. Given the dynamic state of the electric industry in the U.S., I can't think of a more appropriate focus for this conference than "Managing the Business of Nuclear Power". As I have said on many occasions, today, the outlook for nuclear power is arguably the brightest its been since the Three Mile Island accident. Competitive market forces have led to a resurgence of nuclear power by forcing dramatic improvements in the manner in which nuclear plants are managed and operated. Licensees have improved operator training, made significant process improvements, developed sound maintenance and corrective action programs, shortened refueling outages, and as a result, significantly increased both the safety and generation of power in the nuclear fleet. Plants are operating better than ever before, with forced outage rates at an all time low and capacity factors at an all time high. By almost any measure, most of our licensees are doing an excellent job of managing the business of nuclear power in a safe manner.

Managing the business of nuclear regulation is my business and that of the Commission. The dynamic state of the electric industry is also creating many challenges for the NRC. The consolidation of nuclear utilities through mergers, plant sales and the formation of multi-plant operating companies has resulted in an influx of license transfers. Industry interest in license renewal has never been greater and projections indicate that the NRC will face a daunting number of license renewal applications in the coming years. Also, the competition inherent with electric industry deregulation is increasing the nuclear industry's focus on reducing the cost of regulation. This has challenged the NRC on two fronts. First, given that essentially 100% of the NRC's budget is recovered from our licensees, we are being challenged to reduce our costs and make significant strides in the areas of financial responsibility and accountability. Second, we are being challenged to reduce unnecessary regulatory burden on licensees and to risk-inform our regulations. We are being asked to meet these challenges at the same time we are challenging ourselves to become more responsive to our stakeholders and to enhance public confidence. I believe we are up to these challenges. I feel very good about the NRC's ongoing reform efforts and believe that most of our stakeholders recognize that the NRC is doing a much better job managing the business of nuclear regulation.

The nuclear industry, the NRC staff, and our many stakeholders deserve credit for the significant improvements that have been made in the way in which licensees manage the business of nuclear power and the way in which the NRC manages the business of nuclear regulation. However, this is certainly no time for any of us to celebrate. Dynamic environments demand dynamic performance expectations. If we are going to be top-performing organizations in the dynamic environment we undoubtedly will face, we must ensure that the accomplishments we celebrate today only serve to raise our expectations for tomorrow. If the history of the nuclear industry has taught us anything, it is that those content with the status quo quickly become faint images in the rear view mirrors of those that recognize that success must be redefined every time we think we have achieved it.

In light of the fact that the NRC recently celebrated its 25<sup>th</sup> anniversary, I'd like to discuss managing the businesses of nuclear power and nuclear regulation in a historical context. I recently read "A Short History of Nuclear Regulation, 1946-1999" by Sam Walker, the NRC's historian. It is an informative account of the evolution of the commercial nuclear power industry and the regulation of that industry. As a history buff, I found that Mr. Walker's account reinforced the notion that history has a tendency of repeating itself. I encourage you to read this account as I think you will be amazed that many of the challenges and opportunities facing the nuclear industry and the NRC today, are the same challenges and opportunities that faced industry pioneers in the 50s and 60s. I'll draw from Mr. Walker's historical account to make my point.

### **Licensing Bottlenecks**

I will refer to the first such challenge as licensing bottlenecks. During the late 1960s, the nation's utilities rapidly increased their orders for nuclear power stations, participating in what Philip Sporn, past president of American Electric Power Service Corporation, described in 1967 as the "great bandwagon market." The sudden arrival of commercially competitive nuclear power placed unprecedented demands on the Atomic Energy Commission's (AEC) regulatory staff. The flood of applications inevitably caused licensing delays because the staff simply lacked the resources to get the job done. The growing backlog drew bitter complaints from utilities applying to build plants. Many in the industry openly criticized the AEC's licensing process and believed that if the delays continued, the bright future once predicted for nuclear power would be lost. One utility executive quoted in Mr. Walker's historical account called the licensing process "a modern day Spanish Inquisition" carried out by "AEC engineers, scientists, and consultants who have no serious economic discipline". The AEC attempted to streamline its licensing procedures but found it impossible to reduce review time or to satisfy the licensing demands of the industry.

The NRC faces a similarly ominous licensing challenge in 2000. About 10% of the existing U.S. nuclear plant licenses will expire by the end of 2010, and more than 40% will expire by 2015. While the economics associated with new plant construction remain uncertain, nuclear power's favorable environmental and economic position relative to fossil plants, and a much more stable and disciplined regulatory environment, have fueled remarkable interest in license renewal. Earlier this year, the NRC renewed the Calvert Cliffs and Oconee licenses for another 20 years. We currently have the renewal applications for Southern Company's Hatch plant, and Entergy's Arkansas Nuclear One plant under review. We expect to receive more than 20 applications for license renewal over the next 5 years. Based on my discussions with industry executives, I am hard-pressed to identify more than a handful of currently operating plants that may not seek to renew their licenses.

The NRC can be very proud of the fact that we met or beat every milestone we set for the Calvert Cliffs and Oconee license renewals. However, as I stated earlier, we must ensure that the accomplishments we celebrate today only serve to raise our expectations for tomorrow. For the agency to successfully meet the unprecedented demands represented by the new “great bandwagon market” associated with license renewal, our review process must become more efficient and more timely. I believe there are 2 ways to get there. First, we must apply the lessons learned from the first two applications. Second, it is imperative that we promptly build a regulatory infrastructure - and what I mean by infrastructure are things like the Generic Aging Lessons Learned (GALL) report and Standard Review Plan - to support thorough, consistent, disciplined, and timely reviews in the future. Sacrificing our regulatory infrastructure for the sake of saving resources or shaving a few weeks off of our ongoing reviews would be shortsighted. For me, the bottom line is quite simple. We must carefully plan and budget our resources so that we don't fall victim to our own success in the area of license renewal. We must dedicate the resources necessary to build a robust and predictable regulatory infrastructure while at the same time providing the resources necessary to perform ongoing reviews in a thorough and even more timely manner. It would simply be irresponsible for the NRC to allow itself to repeat the problems that plagued our licensing process during the 60s and 70s.

### **Economies of Scale**

The second such challenge facing the NRC and our licensees involves the aggressive pursuit of economies of scale. During the 1960s, there were several important considerations that convinced a growing number of utilities to buy nuclear plants. One was the spread of power pooling arrangements among utilities, which encouraged the construction of larger generating stations by easing fears of excess capacity and over-expansion. A utility with extra or reserve power could sell it to other companies through interconnections. Utility executives believed that large nuclear plants would produce economies of scale that would cut capital costs per unit of power and improve efficiency. This helped to overcome a major disadvantage of nuclear power relative to fossil fuel - the heavy capital requirements for building nuclear plants. This quest for economies of scale resulted in the output of plants leap-frogging from the 100 to 500 to 800 to the 1000 electrical megawatt range.

Today, the economic realities of a deregulated electric industry are driving industry leaders to once again place a high priority on economies of scale. However, today's economies of scale look quite different than those of the 60s. While licensees continue to achieve economies through power uprates, the primary focus of the industry has clearly changed from larger plants to larger nuclear fleets achieved through license transfers. The PECO/Unicom merger, the acquisitions by Amergen and Entergy, and the Nuclear Management Company formed by several midwest licensees, all reflect the financial importance being placed on large nuclear fleets by our licensees. It is my hope that these transfers will provide a tremendous opportunity to further improve the operational performance of the plants.

License transfers represent a significant licensing challenge for the NRC. From my perspective, the NRC's primary responsibility in this area is to ensure that the economies of scale never come at the expense of public health and safety. However, I strongly believe that we owe it to the American people to carry out this responsibility in a manner that does not unnecessarily impede market forces. We simply must provide the resources and the management oversight necessary to ensure that our staff reviews license transfers in a thorough, timely, and disciplined manner.

To our licensees I say, in your quest to get more value from your generating assets, don't jeopardize their future. Proceed responsibly - ensure that your technical and financial analyses are sound, your staff remains focused on operational performance and safety, and your business decisions are not undermined by false economics.

As consolidation in the ownership of nuclear plants continues, the few large companies operating these plants must not become insular. They must continue to recognize the value of looking outside of their organization for solutions, and of sharing information outside of their organization for the common good of the industry. As I said at the Regulatory Information Conference in March, for those who are so bold as to believe that all of the nuclear industry's solutions, all of its best practices, all of its operating experience, lie within your organization, I ask you this: "Are you bold enough to stake your assets on it? I hope the answer is no.

### **Unnecessary Regulatory Burden**

Eliminating unnecessary regulatory burden is another challenge and another opportunity faced by both the early pioneers of the nuclear industry as well as today's industry leaders.

The AEC's fundamental objective in drafting regulations was to ensure that public health and safety were protected without imposing overly burdensome requirements that would impede industrial growth. Commissioner Willard Libby articulated an opinion common among AEC officials when he remarked in 1955, "Our great hazard is that this great benefit to mankind will be killed aborning by unnecessary regulation." Other proponents of nuclear development shared those views. They realized that safety was indispensable to progress, as an accident could destroy the fledgling industry or at least set it back many years. At the same time, they worried that regulations that were too restrictive or inflexible would discourage private participation and investment in nuclear technology. The inherent difficulty the AEC faced was distinguishing between essential and excessive regulations.

As we enter the new millennium, eliminating unnecessary regulatory burden remains a major challenge for the NRC and the nuclear industry. This challenge is closely linked to another regulatory challenge we refer to as risk-informing our regulations. Some of our critics refer to our efforts in these areas as "regulatory retreat". In fact, at a recent Commission meeting, Jim Riccio from Public Citizen referred to our efforts as "the deregulation of nuclear safety standards". Now, while I respect Mr. Riccio for voicing his opinions, I strongly disagree with both assertions. I believe our initiatives in these areas in no way reflect less of a commitment to safety, but instead reflect a more informed commitment to safety. The NRC is simply capitalizing on a wealth of operating experience, extensive research, and well-developed risk insights to bring greater realism to our regulatory framework. Our initiatives should allow both licensees and the NRC to focus more attention on the truly risk-significant aspects of the plants and spend less time on regulatory burdens that contribute little or nothing to safety. They will also allow the NRC to utilize our limited resources more effectively and efficiently.

I and the other Commissioners remain committed to reducing unnecessary regulatory burden and to risk-informing our regulations. However, as we proceed along that course, neither the NRC staff nor our licensees should lose sight of the following 4 points:

1. First, the key word in the term "unnecessary regulatory burden" is "unnecessary". Regulation is by its very nature burdensome. Regulation that carries with it no burden, likely also carries with it no value. In order to achieve its mission, the NRC will impose the appropriate level of regulation it believes is necessary to protect public health and safety and the environment, irrespective of its popularity. Nonetheless, both the NRC and our licensees have a responsibility to the American people to understand where the line between necessary and unnecessary regulation is, and to respect it.

2. Second, our licensees must accept that risk-informed regulation is a double-edged sword. While our move toward risk-informing our regulations will likely provide many opportunities to reduce unnecessary regulatory burden, it would be foolish to think that risk-insights won't also identify areas where more regulation is needed. As long as the industry responsibly accepts the sharp edge of the sword representing additional regulatory burden, the NRC will continue down the path of risk-informing our regulations. Should that edge become dulled by irresponsible industry opposition, the integrity of risk-informed regulation will be compromised, and NRC progress will come to a screeching halt.
3. Third, risk-informed regulation should bring with it the promise of greater regulatory stability. Reactionary regulation is bad regulation. The beauty of a truly sound risk-informed regulatory framework is that it should be immune to the regulatory pendulum swings that have marred this industry's past. From my perspective, an unstable regulatory environment is in and of itself unnecessarily burdensome and is not in the best interests of the public, our licensees, or our staff.
4. Finally, as I stated at the Regulatory Information Conference, we must move forward deliberately, yet cautiously, in the area of risk-informed regulation. While I am optimistic that we can use risk insights to improve many aspects of Part 50, I am not yet convinced that there is sufficient stakeholder support to justify the cost of making a wholesale change to Part 50. Although I am willing to provide the resources necessary to take the important initial steps, I will not support additional resources if there is not sufficient interest in using these alternative regulations.

In summary, I agree with AEC Commissioner Willard Libby's position that the commercial nuclear power industry should not be killed by unnecessary regulation. I am committed to ensuring that this does not happen. I am equally committed to ensuring that the commercial nuclear power industry is not killed by the equally lethal hazards associated with insufficient regulation or a less than credible regulator.

### **High-Level Waste**

History is also repeating itself in the area of high-level waste.

An issue that undermined confidence in the AEC and the nuclear industry in the early 1970s was the AEC's approach to high-level radioactive waste disposal. The growth of the nuclear power industry made the safe disposal of spent fuel rods and other waste materials an increasingly urgent matter. The AEC had investigated means of dealing with reactor wastes for years, but had not found a solution to the problem. As early as 1957, a scientific consensus had concluded that deep underground salt beds were the best repositories. In 1970, in response to increasing expressions of concern about the lack of a policy for high-level waste disposal from scientific authorities, members of Congress, and the press, the AEC announced that it would develop a permanent repository for nuclear waste in an abandoned salt mine near Lyons, Kansas. However, the AEC had not conducted thorough geologic and hydrologic investigations, and the suitability of the site was soon challenged. The uncertainties about the site generated a bitter dispute between the AEC and Congress. It ended in 1972 in great embarrassment for the AEC when the reservations of those who opposed the Lyons location proved to be well-founded.

The disposal of high-level radioactive waste remains a major challenge facing the nuclear industry. As you know, in April, President Clinton vetoed high-level waste legislation sent to him by Congress. Given that we are in an election year, I certainly do not expect any other waste legislation to move forward during this session of Congress. While it would be inappropriate for me to comment on the merits of that decision, I doubt that many would dispute that the nuclear industry is bearing the burden for the federal government's failure to provide a repository for high-level radioactive waste.

The NRC is responsible for licensing the repository after determining whether DOE's proposed repository site and design comply with EPA's environmental standards and with the NRC's implementing regulations found in 10 CFR Part 60. Currently, DOE is scheduled to issue its final Environmental Impact Statement for the Yucca Mountain site in early FY 2001 and its license application in early 2002. I am proud to say that the NRC has met all of its commitments to date and stands ready to fulfill its role associated with Yucca Mountain.

There is a continuing debate between ourselves and the EPA regarding appropriate environmental standards for protection of human health at Yucca Mountain. Although Congress gave EPA the responsibility for setting these standards, I and the other Commissioners have been very active in expressing our views about this matter to Congress. While the NRC believes that a 25 millirem all pathways standard is appropriate, the EPA disagrees stating that it should be 15 millirem with a separate standard for groundwater. Although logical people can disagree on these issues, the EPA is the only regulatory agency in the world that believes there should be a separate groundwater standard. I think that fact speaks volumes. I cannot overstate the national and international implications of this matter or the importance the Commission places on them.

Finally, I appreciate the fact that discussions about long-term milestones associated with Yucca Mountain are of little consolation to those of you facing the imminent loss of spent fuel pool storage capacity and the significant costs associated with dry cask storage. I assure you the Commission has a clear understanding of the spent fuel situation in the United States and is committed to ensuring that safe, technically- sound casks are certified in a prompt and thorough manner. While we have been successful in improving the timeliness and predictability of our cask certification process, we need to achieve further process efficiencies and resolve the generic technical issues like credit for high burnup fuel. Simply put, this is a regulatory responsibility in which we must not fail.

### **Public Confidence**

Sam Walker's historical perspective clearly illustrated the swings in public perception and public confidence that have occurred throughout the history of the commercial nuclear power industry. In the early days of nuclear power development, public attitudes toward commercial use of the technology were highly favorable. Press coverage of nuclear power was also overwhelmingly positive. For example, an article in National Geographic in 1958, concluded that "abundant energy released from the hearts of atoms promises a vastly different and better tomorrow for all mankind." In the early 60s, the public became more alert to and anxious about the hazards of radiation, largely as a result of a major controversy over radioactive fallout from nuclear weapons testing. For the most part, however, during the 60s and to some extent the early 70s, America's support of nuclear power grew as the public viewed nuclear power as a potential solution to environmental concerns and the energy crisis. Since that time, America's confidence in nuclear power has been shaken by events like the Browns Ferry fire of 1975, the Three Mile Island accident of 1979, the Chernobyl accident of 1986, the plant licensing debacles of the 80s and early 90s, and finally the Millstone saga of the 90s. Despite these events, recent polls show that the nation's confidence in the safety of nuclear power is again on an upswing.

In his book entitled "Containing The Atom", Sam Walker quotes former AEC Chairman James Schlesinger as stating that although it "should be difficult to be other than bullish" about the long-term prospects for nuclear power, the pace of development would depend on two variables: "first, the provision of a safe, reliable product; second, achievement of public confidence in that product." While Mr. Schlesinger's comments were made in 1971, there is no question in my mind that they hold true today.

From my perspective, while the growing environmental concerns associated with fossil energy sources may have brought nuclear power back into the energy debate in the U.S. , the resurgence in public confidence that nuclear power is enjoying would not have been possible were it not for the industry's improved safety performance over the last few years. Public confidence must be earned, and the improved overall

performance within the fleet has contributed to a demonstrable increase in public confidence. Nonetheless, let's face it, this confidence is fragile and thus the industry must always be vigilant in protecting it. The best way to do that is by operating plants safely, responsibly, and efficiently. The industry cannot tolerate performance lapses like those that have occurred at Indian Point 2 over the last year. Performance lapses like these not only undermine public, Congressional, and to some extent, regulatory confidence in Indian Point 2, but they also have the spillover effect of eroding confidence in each of the other 102 reactors operating throughout the U.S.

In its quest to improve public confidence, the nuclear industry must not lose sight of the clear nexus between a strong industry and a strong regulator. The industry should not underestimate the value of having a regulator that is tough, competent, and independent. I know that there are some in the industry who continue to call for further reductions in our staff, and others who call for us to dramatically reduce the scope of our regulations. I caution those individuals to be careful about what you ask for. The American public will simply not support or even tolerate a nuclear industry that it views is not overseen by a strong, credible regulator.

I believe the NRC and the nuclear industry have also underestimated the importance of communicating effectively with the public. From my perspective, many in the industry have done a poor job communicating with the public and as a result, public confidence has suffered. They have been reactive in their approach to communications, and have not taken the time to educate the public about nuclear power or to keep them informed about activities at the plants. The industry only has to look at examples such as Carolina Power & Light's Brunswick plant to understand the economic, social, and political benefits associated with effective public communications. During a recent visit to Brunswick, I met with a large group of local government and business leaders and was surprised by the amount of public support that the plant enjoys. It was clear to me that CP&L's efforts to reach out to the neighboring community and its leaders have resulted in significant tangible and intangible benefits associated with a high level of public confidence and trust. It is in the industry's best interests to learn from examples such as this and recognize that maintaining a continuing dialogue with the public makes good business sense.

Poor communication by the NRC has also served to erode public confidence in the agency and the nuclear industry. In the past, the NRC approached public confidence in much the same way the Maytag repairman approaches his job. We were passive in our communications with the public. We allowed our critics to define what our agency was, what its actions meant, and how these actions should be perceived. As a result, the agency frequently found itself in the difficult position of playing catch-up. This approach had its roots with the old AEC. The AEC's organizational philosophy simply did not recognize a role for the agency in enhancing public confidence. The agency paid a very heavy price for this passive approach.

I believe the NRC must become more proactive and forthright in its communications. We must be the first to communicate with the public about important regulatory decisions and must clearly articulate the reasoning behind them. We should change our organizational philosophy so that we no longer allow inaccurate or misleading assertions in the public arena to go unaddressed. When spent fuel casks are referred to as mobile Chernobyl's, I think we should clearly present the true basis for why we feel our regulations will assure that dry cask storage is safe. When opponents of the new oversight process or our decision on N+1 label them as regulatory retreat, we must accurately and promptly respond so that the public is not left with a mistaken understanding of our programs. How will the NRC ever enhance public confidence if we remain passive in the public arena? We simply won't. I sincerely believe that if we have a true and defensible story to tell, it is irresponsible for us not to tell it - a disservice to our licensees, our staff, and, most importantly, the American people.

## **Conclusion**

In conclusion, managing the businesses of nuclear power and nuclear regulation brings with it many challenges and opportunities. In order for the nuclear industry and the NRC to successfully meet these challenges and seize these opportunities, our visions of the future must benefit from the lessons of the past.

George Bernard Shaw once said, "If history repeats itself, and the unexpected always happens, how incapable must man be of learning from experience." The nuclear industry and the NRC must learn from history so that we do not fall victim to the unexpected. To do otherwise would be irresponsible. As the industry reaps the benefits associated with improved performance, and as the NRC and the industry pursue greater efficiencies and regulatory reform, we must learn from the lessons of the past and be careful not to roll back the safety improvements made over the last 20 years. We must ensure that the lessons of the past do not get "reformed out" or "budgeted out" of our programs. We cannot allow ourselves to lose sight of the fact that the performance and safety improvements that both the industry and the NRC are enjoying today came at a very high price -- a price that we cannot afford to repeat.

I want to thank you for giving me this opportunity to share some of my thoughts this morning. At this time, I'd be pleased to address any questions you may have.