

United States Nuclear Regulatory Commission
Office of Public Affairs
Washington, DC 20555
Phone 301-415-8200 Fax 301-415-2234
Internet:opa@nrc.gov

Statement of Jeffrey S. Merrifield

American Nuclear Society Conference

June 7, 1999

S-99-17

Introduction

Good Morning. Thank you very much for the opportunity to speak to you this morning. It is a pleasure and honor to be here. Today, I would like to share some of my views on the future of nuclear power in the U.S. and the issues that I believe will play a critical role in shaping that future.

As many of you know, the NRC has been the subject of a great deal of criticism over the last few years from many of its stakeholders. In July of 1998, the Commission was called to testify before the Senate Environment Committee, where the Senators probed a wide range of issues associated with the NRC. The questions and concerns raised in the hearing were, for the most part, reflective of the concerns raised by the nuclear power industry, public interest groups, and other stakeholders. These concerns can be aggregated into a number of areas: First, NRC requirements and expectations lacked clarity; Second, the NRC had created an environment of regulatory uncertainty; Third, NRC processes and programs lacked predictability, objectivity, and timeliness; Fourth, the NRC focus was misdirected on non-risk-significant matters; and Fifth, the size of the NRC was too large. In my opinion, these critiques provided healthy feedback and served as a much needed wake-up call for the agency.

In response to stakeholder concerns, the NRC has engaged in one of the most aggressive regulatory reform efforts ever undertaken within the federal government. During the thirteen years I have spent in Washington, I cannot think of a federal agency that has made more of a commitment to reinvention than the NRC has made during the last year. As you may know, this effort is memorialized in what the agency refers to as the "Tasking Memorandum". If you have not done so already, I hope that you take the opportunity to review this document. I think you will find that it is broad in scope, and covers a wide range of regulatory changes from improvements in the efficiency and timeliness of processing license renewal applications to the development to a new performance assessment process for operating reactors.

Not only do I believe that the NRC is a more effective and efficient regulator today than it has ever been, but I would also assert that it will continue to improve significantly in the years to come. However, don't just take my word for it. As stakeholders of the NRC, I encourage you to question our decisions, challenge our processes, and demand more from our reform efforts. In the words of former President Ronald Reagan, "Trust But Verify".

As many of you know, we are a fee recovery agency. Simply put, our licensees pay fees to cover the activities conducted by the NRC. As our licensees enter an era that will be marked by increased competition and economic pressure, we are aggressively and successfully making the transition from big government to good government. We are striving to make our

processes more timely and predictable, we are eliminating unnecessary regulatory burden, we are becoming more risk-informed, and we are holding our managers and staff more accountable. As stakeholders of the NRC, I welcome your scrutiny of how we regulate and what the NRC costs. Such scrutiny will only help to reinforce our commitment to making the NRC a more effective and efficient regulator.

At the same time the Agency is remaking its regulations and its way of doing business, it is also remaking itself. With input from outside consultants and a tremendous effort on the part of our senior managers, we have made significant improvements in the management of the Agency. These changes have not only resulted in a reduction in the size of our workforce, but they have also allowed us to submit a budget to OMB that is virtually unchanged from last year, and in terms of real dollars, is at its lowest level in the history of the NRC. Let me put this into perspective. In FY 2000, the NRC will have a budget of about \$471 million. In terms of real dollars, that is a decrease of 25% since 1993. In FY 2000, we will have a staff of about 2800 individuals, down almost 600 individuals from our high of nearly 3400 in 1993. As a fiscal conservative, this is music to my ears.

I know that there are some who will call for us to make further reductions in our staff -- indeed some who will call for dramatic cuts. While I am supportive of having the NRC evolve toward a smaller size as we move forward, I believe that given the level of activities that we currently have underway, drastic cuts in the size of the Agency, or its budget, would be shortsighted and counterproductive. For this reason, I want to express my thanks to Senator Domenici for providing us the financial resources we need to do our job effectively. It is my view that the American public will not support or even tolerate a nuclear industry that is not regulated by a strong, credible regulator.

To understand the role that nuclear power will play in the future, I think it is useful to remember where we have been. Recently, I had the opportunity to visit the Three Mile Island facility. As I approached the site, I was struck by the dichotomy represented by that facility. On the left was TMI Unit 1 - a well-managed and efficient nuclear reactor that is well-positioned to meet the competitive challenges of a deregulated electric industry. On the right was TMI Unit 2 - a shell of a plant that used to be - a plant in which technology reminded us that the impossible was possible and that operating a nuclear power plant should never be routine. For us to discuss the future of nuclear power, we must ensure that the lessons of the past are not forgotten and that complacency and poor management don't force us to repeat the same mistakes that marred this industry's past.

For nuclear power to survive in the U.S., utilities must continue to focus on operating their plants as safely and effectively as possible. They must continue to share insights and best practices even as the electric industry enters an era of increased competition. They must ensure that market pressures do not lead to imprudent budget cuts that could jeopardize plant safety. As history has proven, this industry will always be judged by its weakest link. Like it or not, a serious accident at any plant in this country could be critical to the fate of the entire industry.

In considering the variety of factors that significantly influence the U.S. domestic energy outlook, several specific areas deserve mention - energy security, the greenhouse effect, acid rain, and the disposal of high-level nuclear waste. All of these factors will to some degree play a role in the future of nuclear power. However, with the onset of electric industry deregulation, no factor will have greater influence on this industry than economics.

As the transition to a competitive market has begun to take shape in the electric industry, many areas of NRC focus have emerged. As utilities restructure internally, as ownership changes, as

mergers occur, and as licensees work to control and reduce costs, the NRC must understand and respond appropriately to the effects of the changing business environment on nuclear safety. NRC challenges related to electric utility restructuring include the availability of funds for decommissioning, electrical grid reliability, and the impact of cost-competitiveness on safe nuclear operations. Those challenges are certainly important. However, what I really would like to concentrate on today are 4 issues that I think will ultimately set the stage for the future of nuclear power in the next millennium: 1) License Renewal, 2) License Transfers, 3) Certification of Next-Generation Reactor Designs, and 4) Disposal of High Level Waste.

License Renewal

First - License Renewal.

About 10 percent of the existing U.S. nuclear plant licenses will expire by the end of 2010, and more than 40 percent will expire by 2015. Up until 1998, these statistics by themselves painted a very bleak picture for the future of nuclear power in the U.S. and its role in the nation's domestic energy mix. Making this future even more ominous were the predictions by both the electric industry as well as the financial community that the unpredictable regulatory and economic challenges brought on by deregulation would force many nuclear plants to shut down well before the expiration of their licenses. Two years ago, many people giving this speech would have painted a dismal portrait of the nuclear industry and its future role in meeting U.S. energy needs.

Today, the outlook for nuclear power is arguably the brightest its been since the Three Mile Island accident. There are many economic factors that have led to this transformation, not the least of which is the fact that competition has driven dramatic improvements in the manner in which nuclear plants are managed. Licensees have improved operator training, made significant process improvements, streamlined operations, shortened refueling outages, and reduced costs. Today, plants are operating better than ever before with forced outage rates at an all time low and capacity factors at an all time high. Utilities are recognizing that nuclear plants that are well-maintained and effectively operated can be money-makers even in a competitive, deregulated electric industry. What this means for the NRC is that interest in license renewal has never been greater.

Given the fact that the original 40-year license term was not based on extensive technical evaluation or operating experience, both the NRC and the nuclear power industry have devoted extensive resources to understanding the technical issues associated with allowing a nuclear plant to operate for an additional 20 years. As many of you know, establishing a disciplined, predictable, and timely license renewal process that ensures the protection of public health and safety, has been, and continues to be, a top priority of the Commission. As I have told staff and a number of industry representatives, ultimately, the decision on whether to seek license renewal rests with the licensee. This decision should not be tainted by a concern over the uncertainty and unpredictability of the NRC's regulatory processes.

The Commission has issued a policy statement laying out its expectations for a focused review of license renewal applications. We have established a License Renewal Steering Committee to promptly evaluate any issues that require management attention. The NRC's Executive Council has been directed to closely monitor the license renewal process, to ensure that adequate resources are provided. Using case-specific Orders, the Commission has established an aggressive adjudicatory schedule for reviewing the Calvert Cliffs and Oconee license renewal applications, with a goal of completing the license renewal process in 30-36 months.

So the question that one might logically ask is, how has the NRC done... is it meeting its goals? The bottom line is that the NRC has met or beat every single milestone it set for the Calvert Cliffs and Oconee license renewal reviews.(Pause) Let me repeat that. We have met or beat every single milestone. In the absence of a hearing, the NRC anticipates completing its review on the Calvert Cliffs

renewal application by May 2000, 25 months after it was submitted. NRC review of the Oconee renewal application should also be completed within 25 months after it was submitted. Remember, the goal was 30 to 36 months.

While I am personally pleased with our progress on these two applications, I believe we must closely assess this process so that future applications are reviewed on an even more expedited schedule. Now does that mean I believe we will be able to meet Corbin McNeil's goal of a 6-month review cycle? No. However, I do believe that an 18-20 month time line is a realistic goal for future applications that do not involve an adjudicatory hearing.

I believe that the growing interest in license renewal within the industry is a recognition of a growing confidence that the NRC can get the job done. It is my view that the Calvert Cliffs and Oconee reviews should leave no doubt in anyone's mind that the NRC's renewal process is disciplined and timely. In fact, we expect to receive our next license renewal application in December from Entergy for the Arkansas Nuclear One plants. Having discussed license renewal with many industry CEOs, there is no doubt in my mind that many more applications will follow. Indeed, I have had more than one conversation with utility CEOs who have said that they have changed their view and will be recommending license renewal to their Board of Directors -- simply because of a renewed confidence that the NRC can act in a disciplined and timely manner.

License Transfers

Now let me discuss license transfers.

As the electric industry proceeds down the road toward deregulation, license transfers will become more and more frequent. We have already seen an increase in license transfer applications, in part as a result of corporate restructuring in anticipation of deregulation, but also due to the sale of nuclear power plants.

To ensure that license transfer reviews are conducted effectively and promptly, the Commission recently promulgated regulations establishing an informal and streamlined Subpart M hearing process. In addition, we are developing guidance documents to determine whether a proposed transferee is technically and financially qualified, as well as to evaluate foreign ownership and control issues. We have held a number of meetings with nuclear industry representatives, State and Federal rate regulators, and other NRC stakeholders to gain a broader perspective of their efforts. The overall effect of these measures has been to improve the preparedness of the NRC, our licensees, and the public for dealing with issues associated with electric utility restructuring.

I am pleased to report that the NRC's license transfer process has **already** proven to be predictable, disciplined, and prompt. In April, the NRC approved the transfer of the operating license for Three Mile Island Unit 1 from GPU Nuclear to AmerGen Energy Company. Because AmerGen is jointly owned by PECO Energy and British Energy, Three Mile Island Unit 1 became the first, and likely not the last, U.S. nuclear power plant directly purchased, in part, by foreign interests. Despite the numerous issues raised by this ground-breaking ownership arrangement, the NRC completed its review of this license transfer in less than 4 ½ months.

In May, the NRC approved the transfer of the operating license for the Pilgrim Plant from Boston Energy Company to Entergy. The NRC's review of this transfer was also completed in

a little over 4 months.

I believe that over the next few years, we are likely to see a dramatic shift in the ownership of nuclear generating facilities across the nation. It is clear that many nuclear power plants will be sold and that the number of owners of these plants will be significantly reduced. The NRC has been told by some of its licensees that it can expect to see sales of between 6 to 12 nuclear plants within the next year. In most of the transactions, I expect that the **sellers** will be companies that operate only one nuclear plant or simply wish to exit the electric generation business. I expect that the **buyers** will be large nuclear generating companies that own and operate a substantial number of nuclear units.

Let me reiterate that the NRC regulates the safety of these plants and it would be inappropriate for us to be unduly involved in their financial concerns. However, it would be equally inappropriate for us to conduct our business in a vacuum. I view the consolidation in the nuclear industry as a tremendous opportunity to further improve the operational performance of these plants. The buyers - the large nuclear generating companies - have economies of scale and resources that are simply not available to companies that own and operate only one nuclear unit. As we enter the world of competition brought on by the deregulation of the electric industry, these economies of scale will likely be a critical factor in maintaining the economic viability of many nuclear plants. Further, I believe history has shown that improved operational performance can also lead to enhanced plant safety. From a regulator's perspective, I am truly encouraged by the fact that most of these transfers will likely involve buyers with excellent plant performance records. Given this fact, I am hopeful that these transfers bring with them opportunities to enhance plant performance and safety, and I assure you the Commission is committed to a license transfer process that remains predictable, disciplined, and prompt.

Certification of Next-Generation Reactor Designs

No discussion about the future of nuclear power would be complete without mentioning the issues associated with the certification of next-generation reactor designs. I am not here today to make you experts on the NRC's licensing process or to suggest that utilities will be lining up to build new nuclear plants in the near future. Both are unrealistic expectations. Instead, I would like to convince you that the NRC's licensing process for new nuclear plants is efficient and predictable. Indeed, the thought of a new nuclear plant being built in the U.S. is not as far-fetched as it was just 2 years ago.

By the early 1980s, the NRC and the nuclear industry were convinced that the licensing process for new plants could be improved in ways that would enhance safety, improve efficiency, and reduce uncertainty by achieving earlier resolution of technical and policy issues. As many of you are aware, taking advantage of this insight proved to be a long and arduous effort. However, with the issuance of Part 52, the NRC provided a reformed and predictable licensing mechanism that allows for early site permits, certified standard designs, and combined construction and operating licenses.

The beauty of early site permits is that a potential licensee can apply for, and receive NRC approval of, a site permit, and put it on the shelf for a number of years until it decides on whether to actually build a plant on that site. Many of you may not realize that the Department of Energy and industry representatives conducted an early site permit demonstration program in the early 90s. The demonstration program found no major regulatory impediments in the site

approval process.

Standard plant design certifications are approved by the NRC through rulemaking and are valid for 15 years. In May 1997, the NRC certified the General Electric Advanced Boiling Water Reactor which has a rated power of 1300 megawatts electric. That month, we also certified the ABB-Combustion Engineering System 80+, a 1300 megawatt PWR. Finally, in September 1998, we issued a Final Design Approval to Westinghouse for the AP600, a 600 megawatt PWR design. This design could be certified by the NRC as early as this December.

It goes without saying that the NRC's "one-step" licensing process in Part 52 brings with it efficiencies and predictability that were lacking in the two-step process of Part 50, which required a separate construction permit and operating license. As we have told Congress, if a utility were to submit an application for a combined license which references an early site permit and a certified reactor design, the NRC could issue that license in about 1 year. (Pause) 1 year.

Even with the advantages of the advanced reactor designs and the increased efficiency of the NRC's licensing process, the likelihood of renewed demand for new nuclear plants in the U.S. remains uncertain. As I said previously, economics will ultimately decide nuclear power's role in this country's energy mix. But, let there be no doubt, as has been reported in the trade press, there have been recent discussions among the nuclear utilities regarding the construction of a new nuclear plant in the U.S. within the next decade. While it is inappropriate for the NRC to endorse or promote the construction of a new plant, I do believe that we have created a licensing process in Part 52 that is sound. Whether a new plant is ordered or not, we are prepared to conduct our review in a disciplined, thorough, and timely manner.

Disposal of High-Level Nuclear Waste

A final key issue that will undoubtedly influence the role of nuclear power in the U.S. energy strategy is the disposal of high-level radioactive waste.

Congress has designated Yucca Mountain in Nevada as the single candidate site for characterization as a potential geologic repository. If the site is determined to be suitable and if the NRC issues a license to dispose high-level waste at Yucca Mountain, the facility is anticipated to be available for disposal activities beginning in 2010.

I will preface my personal thoughts on high-level waste by saying the NRC stands ready to fulfill its role associated with the repository. Having said that, I want to briefly discuss 2 related issues I feel strongly about: 1) dry cask storage and 2) NRC-EPA interface in the development of radiation standards.

The Commission recognizes the scheduling pressures associated with filling spent fuel pools and the need for certified casks. As we have made clear in the Tasking Memorandum, the Commission takes cask certification very seriously and is committed to ensuring that technically sound casks are certified in a prompt and thorough manner. I think we have significantly improved our process for certifying casks and have every reason to believe we will successfully meet the aggressive certification milestones we have set for ourselves.

I am not so optimistic about the interface between the NRC and our counterpart agency, the EPA, regarding the development of radiation standards. As you may know, there is a

continuing debate between ourselves and the EPA regarding the appropriate standards for protection of human health at Yucca Mountain. Although Congress gave EPA the responsibility for setting these standards, I and the other Commissioners were convinced that we needed to share our view on this matter as well, and recently, the NRC testified regarding this issue before the House Commerce Committee and the Senate Energy Committee.

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. (PAUSE) I cannot overstate the national and international implications of this matter.

Until we as a nation resolve the disposition of high-level waste, this issue will continue to cast a cloud over the continued use of nuclear power in the United States. Whatever route Congress decides to take on this matter, we as the NRC will be prepared to carry out their decision.

Closing Remarks

In closing, let me just reiterate - the outlook for nuclear power in the U.S. is brighter today than it has been in a very long time. However, you should not lose sight of the fact that this outlook is a fragile one. The continued safe operation of the existing fleet of nuclear plants remains the foundation upon which the future of this industry will be built.

I hope I have illustrated that when you imagine what nuclear power's role will be in the new millennium, you should do so in the context of both the present, as well as the past. The decisions being made today in the areas I discussed are shaping the future that you as stakeholders in this industry will ultimately live with. I would urge all of you to remain engaged in, and offer solutions to, the challenges facing the industry in areas like license renewal, license transfers, new plant construction, and high-level waste. Those of you who are content to stand on the sidelines during this period must be prepared to live silently with the future that others paint for you.

Let me reiterate one thing. The mission of the NRC is to protect public health, safety, and the environment. When we talk about our reform efforts in terms of risk-informing our regulations and reducing unnecessary regulatory burden, the most important word for you to remember is the word "unnecessary". Our reform efforts in no way reflect less of a commitment to safety, but instead reflect a more enlightened and risk-informed commitment to safety. The changes we have made will 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 to safety. Finally, they will allow the NRC to utilize our resources more effectively and more efficiently.

Supporters of our process call it "overdue regulatory reform". Opponents of our process call it "regulatory retreat". I hope you will join me in calling it what it truly is: Good, Common Sense Government!

Thank you very much. I would be pleased to use my remaining time this morning to answer any questions you may have.