



# ***NRC NEWS***

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## **SAFETY: THE FOUNDATION UPON WHICH ECONOMIC VALUE IS BUILT**

### **REMARKS OF**

**JEFFREY S. MERRIFIELD  
COMMISSIONER**

**AT THE  
2001 ANS ANNUAL MEETING**

**JUNE 18, 2001**

Good Morning. Thank you very much for the opportunity to speak to you today. I applaud Mike Sellman and his team for putting together this important annual meeting and for developing a program that should prove to be interesting and informative.

Let me start by saying that the state of the U.S. nuclear industry today is very sound and that the outlook for nuclear power is the brightest its been in several decades. By almost any safety, reliability, or economic performance indicator, the 103 operating nuclear power plants in the U.S. are operating better today than ever before. Our licensees have developed sound maintenance and corrective action programs, improved operator training and performance, made significant process improvements, shortened refueling outages, and as a result, significantly increased both the safety and generation of power in the nuclear fleet. This improved performance has resulted in an increase of generation from the existing fleet equivalent to placing 23 new 1000 megawatt power plants on line. This performance has also set the stage for nuclear power's return to the forefront of the energy debate in the United States.

Over the past several months, Americans have been inundated by news reports that describe a renaissance that is occurring within the nuclear power industry. As you undoubtedly know, just last month, the Bush Administration unveiled its national energy plan which calls for nuclear energy to be "a major component of the United States fuel mix". I understand the enthusiasm within the nuclear industry for new plant construction; however, as an NRC Commissioner, I also understand the significant technical, regulatory, and infrastructure challenges that are raised by the prospect of new

plants. For example:

- There is serious consideration being given to the reactivation of construction on WNP-1 and Bellefonte. Should our licensees pursue that route, there are regulatory and technical challenges that will have to be addressed.
- Several of our licensees are actively considering applying for an early site permit in the very near future. Given that Part 52 has never been fully exercised, there is understandable uncertainty about the application of the early site permitting process.
- Should a potential licensee actually make the decision to go forward with construction of a **new** plant in the United States, we will face many challenges associated with:

(1) a combined operating license process that has never been exercised;

(2) a human capital pipeline that will have to be rebuilt after many years of neglect; and,

(3) the industry's reliance on foreign manufacturers for large reactor components and regulatory oversight of those manufacturers.

- Finally, should a potential licensee choose to move forward with an **advanced** reactor design like the Pebble Bed Modular Reactor, the NRC and the industry will have to meet formidable challenges associated with:

(1) a regulatory infrastructure built around light water reactor technology;

(2) a workforce with limited experience and expertise in these technologies; and,

(3) policy issues pertaining to such things as emergency planning and containment, that will undoubtedly have significant public confidence ramifications.

There should be no doubt in anyone's mind that these challenges are real, and they are significant. They will often put both the NRC and the nuclear industry in uncharted regulatory waters. I assure you that I and my fellow Commissioners recognize these challenges and have taken the proactive steps we believe are necessary to ensure the NRC is prepared to carry out its regulatory responsibilities in an effective and efficient manner.

I applaud the ANS for choosing as its theme for this year's annual meeting, **Safety Culture and Its Relationship to Economic Value in a Competitive Market**. It is a tribute to the maturity of this industry that despite the success the industry is enjoying and the exuberance over new plant construction, the primary focus of this meeting is **Safety**. As is so accurately reflected in the program for this meeting, "safety and safety culture are the foundation for the future growth of this industry". I believe that the future of the nuclear industry does not hinge on corporate decisions about new plants -- it hinges on the safety of the existing fleet of reactors. Thus, neither the NRC nor the industry can allow the headlines about new plants to distract us from maintaining the safety of the current fleet, nor can we permit ourselves to lose momentum on the important regulatory improvement initiatives that are underway.

Today, I am going to dissect the two cornerstones of this meeting: Economic Value and Safety Culture. From my perspective, safety and economic value are not only compatible, they're inseparable. Safety is simply the foundation upon which a plant's economic value is built. Anyone who believes that safety and economic value are mutually exclusive goals is simply blind to the realities that history has unmistakably, and sometimes painfully, taught this industry. **Poor safety performance ultimately manifests itself in poor plant reliability and poor economic performance**. Poor safety performance will bring with it severe regulatory consequences and poor plant reliability will undoubtedly bring with it the severe economic consequences of a competitive electric market. I will begin today by briefly discussing two important initiatives that should, if done responsibly, maintain safety while significantly enhancing the economic value of plants. I will then share my views on what I believe are three

fundamental threats to a plant's safety culture. Finally, I will discuss the economic value of public confidence.

## **ECONOMIC VALUE**

The relationship between economic value and safety is not new to the NRC. In fact, it is at the center of two of the most significant regulatory challenges the NRC faces today: license renewal and power uprates.

### **License Renewal**

License renewal is clearly at the forefront of the industry's efforts to enhance the economic value of its plants. Nuclear power's favorable environmental and economic position relative to fossil plants, the growing need for electric generation in the U.S., and a much more stable and disciplined regulatory environment, have fueled remarkable interest in license renewal. In a speech to the Nuclear Energy Assembly last month, Joe Colvin, NEI's President and CEO, indicated that "renewing the licenses of nuclear plants made enormous economic sense" and that virtually all plants will ultimately seek license renewal. This speaks volumes about the renewed economic value of these plants.

Last year, the NRC renewed the Calvert Cliffs and Oconee licenses for another 20 years. We are well along in our reviews of the renewal applications for ANO, Hatch, and Turkey Point. Just a few weeks ago, we received the applications for North Anna and Surry, and just last week, we received the applications for Catawba and McGuire. On the immediate horizon lies the license renewal application for the two reactors at Peach Bottom. For the NRC, the addition of these 10 reactors to our license renewal process in just a 2-month period represents a challenge -- a daunting challenge -- but a challenge that I am confident we are ready to meet.

My message to licensees considering license renewal is that the recipe for success is quite clear: develop sound programs for managing plant aging, submit renewal applications that are of the highest quality, and ensure that license renewal does not distract your staff from maintaining the operational performance and safety of your plants. My message to all of our stakeholders is that the NRC will never allow safety to be compromised in order to enhance a plant's economic value. We have an obligation to review license renewal applications; we do not have an obligation to approve them. Having said that, I believe that we also have an obligation to ensure that our review process is conducted in as efficient and timely manner as possible. We must plan and budget our resources carefully. We must apply the lessons we have learned from the initial applications so that further process improvements can be made. Finally, we must continue to improve the Generic Aging Lessons Learned and the Standard Review Plan so that future reviews are carried out in a disciplined, consistent, and even more timely manner. In essence, this is the NRC's recipe for success.

Just two years ago, there was considerable uncertainty about whether the NRC could meet its goal of a 36-month review process. Despite this uncertainty, at the 1999 ANS Annual Meeting in Boston, I challenged the NRC staff to make the process improvements necessary to responsibly achieve an 18-month review schedule. At that time, many individuals within the NRC, and quite frankly, within the industry, felt that I was being unrealistic. Today, the NRC stands on the verge of renewing the ANO-1 license in just 17 months. I am very proud of the fine job our staff has done on the initial license renewal reviews and I applaud them for rising to my challenge. However, if our licensees continue to proceed responsibly, and if the NRC continues to strive to improve the efficiency and effectiveness of its review process, I believe it is not unreasonable to expect that two years from now, the Commission itself may not be satisfied with even an 18-month review process.

### **Power Uprates**

Another initiative that is taking on rapidly growing relevance in the industry's efforts to enhance the economic value of its plants is power uprates. This increased relevance is a result of the economic reality that power uprates are the least costly means by which to increase generation. To date, the NRC has approved approximately 2000 megawatts-electric of power uprates, and has done so in a manner

that is protective of public health and safety. Until recently, these uprates were typically on the order of two to seven percent and because licensee interest was somewhat measured, these uprates did not significantly challenge NRC resources. Now, the economics of nuclear power has changed so dramatically, that the NRC finds itself facing an ominous licensing challenge in this area. Many licensees are taking advantage of a rule change the NRC made last year to Part 50, Appendix K, and are pursuing power uprates of around 1½ percent. Several BWRs are also capitalizing on a GE Topical Report and have submitted applications for extended power uprates of 15 to 20 percent. Based on information provided to us by the industry, we anticipate that most BWRs will ultimately follow this path. Some industry analysts are predicting that licensees will pursue power uprates totaling 8,000 to 12,000 megawatts in the coming years.

I encourage industry leaders to proceed responsibly in this area. In your quest to get more value from your generating assets, don't jeopardize their future. You must ensure that engineering analyses are sound, safety margins are well understood, and plant reliability is not challenged. You must reinforce to your staff that your corporate commitment to safety must serve as the foundation for any effort to improve the economic value of your plants. Anything short of this amounts to false economics.

As for the NRC, I believe our record demonstrates that we are prepared to review uprate applications in a manner that is fully protective of public health and safety. However, I do not believe our record demonstrates quite so clearly that we can consistently carry out these reviews in a disciplined and timely manner. For example, I am not satisfied with the timeliness and discipline of our reviews associated with the 1½ percent uprates that I just mentioned. The staff recently informed the Commission that it is spending more time and resources reviewing these small uprates than it is on uprates of five percent. This is simply not a risk-informed way of doing business. It is clear to me that process improvements and increased management oversight are absolutely essential to ensure we consistently meet our growing regulatory responsibilities in an efficient and effective manner. While safety is our highest priority, we have a responsibility to the American people to carry out our safety mission in a risk-informed manner that does not inappropriately detract from the economic value of these plants.

## SAFETY CULTURE

Let me now turn to the second cornerstone of this conference, **safety culture**, and share my views on what I believe to be three fundamental threats to a plant's safety culture: an ineffective corrective action program, complacency, and insularity.

### Corrective Action Programs

I believe one of the greatest threats to a plant's safety culture is an ineffective corrective action program. I challenge anyone to dispute my assertion that the dramatic improvements made in both the safety and economic performance of this industry would not have been possible without the equally dramatic improvements made to plant corrective action programs. Record capacity factors, breaker-to-breaker runs, high levels of equipment reliability, and fewer plant transients do not happen by accident. They happen only when plant management fosters a safety culture which encourages workers to identify problems and finds workarounds intolerable. They happen only when management holds itself accountable for prompt and effective resolution of identified problems. They happen only when management places a high priority on pursuing latent conditions that lie dormant but are poised to reveal themselves during the worst of situations.

Despite the industry's remarkable improvements in this area, corrective action programs at some plants warrant additional attention. To those plants I say, "let history be your guide". The fact is, the history of this industry is marred with plants that have paid a heavy price because management failed in its responsibility to foster a robust corrective action program. These plants paid a staggering price to rectify poor safety and economic performance. However, **that** price pales in comparison to the price paid to correct the resulting unhealthy work environment - an environment in which employees stopped looking for problems and management became tolerant of mediocrity. The NRC believes that effective corrective action programs are so essential to safety that they are a centerpiece of the NRC's new reactor oversight process. Should the NRC staff lose confidence that a licensee's program is robust enough to

maintain plant safety, I assure you our regulatory response will be swift and it will be severe. I hope none of our stakeholders expect any less. Also, given that a poor corrective action program will undoubtedly manifest itself in a plant's capacity factor and reliability, I would expect that the competitive market will be an equally swift regulator. There's a saying that goes, "If you're not finding problems, you are missing opportunities for growth". I encourage the industry to continue to challenge its corrective action programs to ensure that opportunities for growth are not lost.

### **Complacency**

Another threat to a plant's safety culture is complacency. The nuclear industry must continue to challenge itself to resist the insidious build up of complacency that can occur when organizations become content with their own success. As I have reiterated on many occasions, in the increasingly dynamic environment facing the nuclear industry, those that are content with the status quo will undoubtedly become faint images in the rear view mirrors of those that recognize that success must be redefined every time they think they have achieved it. While the industry is performing very well, it was not long ago that many plants were plagued with operational problems. We cannot allow ourselves to forget about the Davis-Besse feedwater event, the fire at Browns Ferry, the Millstone saga, and the extended shutdowns of the 80s and 90s. We cannot allow ourselves to lose sight of the fact that the performance improvements the industry is enjoying today came at a very high price--a price the industry cannot afford to repeat. While recent news coverage centers around the revival of the nuclear industry in the U.S., let's not forget that just five years ago, this industry was on the cover of Time magazine for much different reasons. As they say in Hollywood, do not allow yourself to be seduced by favorable reviews. Complacency is simply this industry's worst enemy--a significant threat to both a plant's safety as well as its economic value.

### **Insularity**

Finally, I believe that insularity is a growing threat to the safety culture of the nuclear industry. I recently read a speech that Mike Sellman gave at the ICONE-9 conference in Nice, France. In that speech, Mike insightfully pointed out that there are no "local mistakes" in this business. I couldn't agree more. I also believe that there should be no "local solutions" in this business either. 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 their organization for solutions, and of sharing information outside of their organization for the common good of the industry. Plant managers within these large companies must never become comfortable benchmarking themselves only against their organizational peers, mistakenly believing that the rest of the U.S. nuclear fleet and the international community offer few operational insights that cannot be more readily acquired from within. As I have said on many occasions, for those who are so bold as to believe that all of the nuclear industry's solutions, all of its best practices, and 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 and expect the answer is no.

### **THE ECONOMIC VALUE OF PUBLIC CONFIDENCE**

Now, let me turn to an area of great importance to the NRC and the nuclear industry; the issue of public confidence. I applaud the ANS for recognizing in its program that public support for new nuclear construction will only come if there is strong public confidence in the safety of nuclear power and the industry's ability to operate plants responsibly. I couldn't agree more. 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. Nonetheless, this confidence is fragile and thus the industry must always be vigilant in protecting it. The best way to do that is by continuing to operate the plants safely, reliably, and efficiently.

I find it very intriguing how the nuclear industry approaches public confidence in such a diverse manner. Some licensees, like Progress Energy, view public confidence and effective public communication as high corporate priorities -- priorities that I believe make good business sense. These licensees understand the economic, social, and political benefits associated with public confidence, and

they seize opportunities to enhance it. These licensees recognize that public confidence must be earned and it must be vigilantly protected. Other licensees simply ignore public confidence, seemingly unwilling to spend the time and resources necessary to enhance it. Licensees that adopt this approach do so for a variety of reasons ranging from a mistaken perception that public confidence has no economic value, to a hopeless resignation that public confidence simply cannot be influenced, to a misguided perception that good plant performance speaks for itself and thus public outreach is unnecessary. Finally, there are still a few licensees that recognize the importance of public confidence, but simply do not maintain plant performance at a level that engenders a high degree of it.

My views on this matter are quite clear. Enhancing public confidence and communicating honestly and effectively with the public are not this industry's burdens; they are its responsibilities. I believe that those who dismiss the value of public confidence serve to erode the foundation upon which the future of nuclear power will be built. To those licensees whose plant performance does not engender public confidence, I say fix your problems and fix them expeditiously. Your performance not only undermines public confidence in your plant, but it has the spillover effect of eroding public confidence in each of the 103 reactors operating throughout the U.S. To those licensees who believe public confidence has no economic value, I encourage you to try to make that argument to your colleagues at Indian Point 2. I am quite certain that ConEd found the economic burdens associated with facing a public that had lost confidence in their ability to operate the plant safely to be quite severe. Finally, to those licensees that mistakenly believe that public confidence cannot be enhanced, I encourage you to learn from your colleagues at Millstone, who were once paralyzed by a complete loss of public confidence, but who have made significant strides in the difficult and costly journey of earning this confidence back.

In sum, it is indeed difficult to quantify the economic value of public confidence. However, as those plants that have lost it can attest, the economic impacts associated with restoring lost public confidence are real, they are quantifiable, and they can be staggering.

## **CONCLUSION**

In closing, William Jennings Bryan once said, "Destiny is not a matter of chance; it's a matter of choice. It is not a thing to be waited for; it is a thing to be achieved." The destiny of the nuclear industry will not be defined by corporate decisions surrounding new plant construction. Instead, it will be defined by those men and women responsible for operating and maintaining the existing nuclear fleet, and by those industry leaders who are ultimately responsible for fostering a healthy safety culture within their organizations. The stakes are high and the burdens great. However, if recent performance is any indication, I am confident that the industry is up to the challenge and is fully committed to ensuring that its destiny is not left to chance. Thank you very much.

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