



# NRC NEWS

## U.S. NUCLEAR REGULATORY COMMISSION

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### **“A Look Ahead for NRC and the Industry”**

**NRC Chairman Dale E. Klein**

**Canberra User's Group  
Indian Wells, CA**

**June 27, 2007**

Thank you.

You may have seen on the news that the President was in Alabama last Thursday to commemorate the restart of the Browns Ferry Unit One nuclear reactor. He toured the plant and congratulated the hard work of the TVA and NRC employees who supervised the safe restart of the plant after 22 years. The President also gave a speech that focused on the importance of expanding the use of nuclear energy to help solve the nation's growing energy needs and significant environmental challenges.

I also had the opportunity to speak to the TVA audience briefly. But since I am a regulator, and not an advocate for or against commercial nuclear power, I simply congratulated them on successfully meeting the NRC's rigorous safety and inspection standards, and earning the authorization to restart Unit One.

Many people regard this restart as a sign that the Nuclear Renaissance is under way. That may or may not be the case. In any event, I can tell you that the NRC is quite busy. Let me give you some idea of what we are facing.

- a. We've been told by industry to expect license applications for 27 new reactors in the next two years... and every day our Executive Director of Operations warns me to prepare for an even higher number.
- b. To do that, we had to create an entirely new inspection office in Atlanta.
- c. We are scrambling to increase our workforce by a net of 600 employees.
- d. We urgently need 120,000 more square feet of office space at our headquarters.
- e. With uranium at \$130 a pound, we are hearing from a dozen companies expressing an interest in new mining operations in the U.S.
- f. We are making plans to receive an application for the Yucca Mountain high-level waste repository, which DOE has said it plans to submit next year.

- g. Our office in charge of international programs has its hands full dealing with the fact that nuclear energy has become, in almost every respect, a multinational business.
- h. And all of that is on top of our regular workload of overseeing the safety of the 104 plants already operating in the U.S. and a large number of licensees using radioactive materials.

How are we dealing with all of this? Well, the Commission's most immediate challenge is finding and hiring the additional 600 full-time employees I mentioned—which we hope to accomplish by 2009. This significant expansion of our staff, in addition to ordinary employee turnover, means that we will have 1,200 new people at the NRC headquarters by 2009—nearly one-third of our entire workforce.

Obviously, this kind of growth and transition will not be easy. And given our serious and often complex regulatory responsibilities, hiring people is just the first step. In addition to finding qualified employees, we need to ensure that the staff is appropriately trained to handle our future regulatory obligations... including new reactor technologies, such as Digital Instrumentation and Control.

This demand for qualified staff is complicated by the fact that at the same time we are looking for qualified engineers and skilled workers, industry is also seeking to hire such people to meet its needs. But we have a comprehensive plan in place, and I believe that we will be able to meet the significant challenges we face in the areas of workforce development and knowledge transfer.

In the final analysis, I am confident that we will be prepared. I have assured Congress and industry that the NRC will not be a bottleneck. Notwithstanding the challenges I just outlined, our staff is highly professional, motivated, and dedicated. And in case you missed the announcement, we are the "Best Place to Work" in the federal government. So we will do our job, and we will do it well.

There is one thing that would make our jobs easier... and it is something that all of you can help us with. I am talking about the need to expand and refine the public's understanding about all things nuclear. You just heard Frederic Van Heems give a very good explanation of how the Nuclear Renaissance is unfolding. And I think that President Bush's visit to Brown's Ferry—and the significant media coverage of that visit—prove that there is a lot of interest in nuclear issues. But the fact that the media and the public at large are paying attention does not necessarily mean that they understand the issues as well as they might. And if industry doesn't explain these issues, then someone else will.

A few weeks ago I spoke to the Society for Nuclear Medicine, and I pointed out that because there is so much focus on the NRC's work on reactors, many people don't appreciate the other half of what we do—which is regulating the safe use of nuclear materials for research, medical applications, and other purposes. That's unfortunate for several reasons. If more people understood the nature of radiation, and the important role it plays in our everyday lives, they might be less afflicted by what you might call "radiation phobia."

There are, of course, very real issues and grave dangers involved with radiation, and it is incumbent on all of us to lay them out in detail. But I think you would agree that the public also deserves to know what not to be afraid of.

So I challenged the audience to become much more active in helping to give the public a better understanding of nuclear materials and radiation in a broad sense. This was a conference comprising several thousand health professionals. And I pointed out that as doctors, nurses and medical

technicians, they had a position of trust and confidence that could help them undertake this effort in a credible way.

But all of you are also in a unique position to educate the general population. Because so many of you here this morning are involved in radiation detection, analysis, and instrumentation, you are well equipped to help explain these issues clearly and concisely.

Now, as all of you know very well, the first step in explaining things properly is having the right metrics. So let me take this opportunity to propose a new calibration that you could put before your Standards Committee, and perhaps the National Institute of Standards and Technology. The new metric or quantification method that I am suggesting would be called... “The Standard Banana.”

Many of you will know immediately what I am referring to, but let me tell you a quick story to put this in context.

Last year, I visited the Port of Seattle and toured the radiation detectors operated by U.S. Customs and Border Patrol at the Port. Their primary mission is to examine cargo entering the U.S. that may contain nuclear materials that could be used in weapons or dirty bombs. They have excellent equipment and well-trained and motivated agents. Part of that training is to understand what is a real threat versus a naturally occurring source. They need to make decisions—at this one facility, they average 1,600 hits per month. In fact, while I was there one cargo container triggered the alarms. It was a shipment of Chinese fireworks and isotopic analysis showed the culprit was potassium 40.

The Customs agents told me about one particular port that receives nothing but bananas – and virtually every shipment sets off the detectors. That struck a chord with me, because some of my fellow Commissioners have joked for some time about creating the “standard banana” as a harmless unit of radioactivity.

The public needs to understand there is such a thing as harmless exposure—which I think most people would grasp if you explain it in terms they can understand... like a standard banana.

My fellow Commissioner Ed McGaffigan has frequently pointed out that we’re all in violation of standards. Ed said once in an interview, “We’re self-radiating ourselves at 40 millirems per year because of the potassium 40 we carry in our bodies. Double beds -- your spouse will radiate you to about two to three millirems per year. Those are doses at which we actually regulate. And I’ve always wondered, when people [demand] tighter regulation, why they’re not demanding that double beds be regulated, or bananas, or brazil nuts”—end quote.

It would be helpful for the public to know these facts when, for instance, there is debate about increasing security for smaller radiation sources. All of us need to work to see that the public deliberation over these matters proceeds in a reasonable and risk-informed manner.

Without such understanding, we will continue to receive pressure to increase health and safety as well as security requirements to reach a “zero” risk level. As I told the Society for Nuclear Medicine, this would likely have the opposite of the intended outcome. It could actually decrease the overall health and safety of the US population by imposing such restrictive requirements that the medical community would essentially be denied access to radioactive materials for nuclear medicine, thus preventing patients from receiving beneficial treatments.

Now, while the public education campaign I am talking about is important for the medical community, it is even more crucial for the commercial nuclear energy industry. After all, people trust their doctors... most of the time. But there is not the same reserve of trust for nuclear power plant owners. So one of the themes I have been reiterating in my speeches to industry representatives is the need to make sure that the senior executives of the power companies have a proper understanding of the technical issues involved in operating commercial nuclear reactors. These are generally people who are very well trained in business and management—and that is important, obviously. But if industry expects the Nuclear Renaissance to proceed smoothly, the executives who run the utilities also need to be able to communicate effectively about nuclear and radiological issues.

So let me conclude by asking those of you who really understand radiation to help in this effort. I would like to see a genuinely coordinated and concerted effort by those of you in the detection and instrumentation communities to inform the public, the media, your elected officials, and other opinion leaders about the causes, effects, risks, and benefits of nuclear and radiological issues. Give them the facts regarding both natural, background radiation, as well as the many purposes that nuclear materials serve in our society.

This would make your work easier, and it would make the work we do at the NRC easier. And frankly, improving the level of understanding in public opinion is a worthy goal in its own right. Abraham Lincoln, who didn't know much about nuclear science but knew a lot about democracy said, "In America, public opinion is everything. With it, nothing can fail. Without it, nothing can succeed."

With that, let me conclude by thanking you for the invitation to join you this morning and share some thoughts with you. And I do hope you will heed my challenge. Since I have four years left on the NRC, I will have ample opportunity to check on your progress!

Now I would be happy to take some questions.