NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

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Prepared Remarks of NRC Chairman Dale E. Klein
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Let me start off by congratulating all of you on the formation of the Big 12 Engineering Consortium. I have often said that universities, community colleges, business groups, government agencies, and utilities need to work together to meet the needs of the nuclear workforce across all levels of training and education. The fact that students enrolled in any of your schools can take online nuclear engineering courses is a major achievement, and that will go a long way toward helping the nation meet the growing need for professionals with nuclear engineering training. So on behalf of NRC—and the rest of the federal government—I want to thank you and congratulate you for creating this Consortium.

Congress has also recognized the need to prepare the next generation of nuclear engineers and technicians, and has allocated $15 million for the NRC to support scholarships, fellowships, and faculty development at colleges, universities, and trade schools. Many of the people that are needed for the nuclear workforce—including skilled craft workers such as electricians, welders, pipe-fitters, mechanics, electronics technicians, and others—require specialized training, but not advanced degrees. But we also need those advanced degrees. So last month, the NRC announced the grant allocations, which went to 33 institutions in 18 states, including some of the schools in the Consortium (Texas-Austin, Texas A&M, and Missouri-Columbia). If you are from a school that did not receive a grant, I would encourage you to apply, or re-apply, next year—assuming Congress renews the funding.

Before I tell you a little about the workload and employment needs we are facing at the NRC, let me make clear that while I am a strong advocate of nuclear *education*, I do not take a position for or against nuclear *energy*. As a regulator, my job is to evaluate any applications for new nuclear power plants in a responsive and timely way. But the NRC's priority is the safety and security of the nation's operating nuclear fleet, as well as other commercial nuclear materials and facilities. With that in mind, let me tell you where we are with regard to applications to build new nuclear power plants here in the U.S.

So far, the NRC has received 12 site applications for 21 reactors. As you are probably aware, these are the first new reactor license applications to be submitted in decades. We are also

experiencing a significant increase in licensing activities for uranium recovery and fuel processing facilities; and we recently received an application from the U.S. Department of Energy for a high-level nuclear waste repository at Yucca Mountain in Nevada. This very large and complex application is expected to involve more than 100 NRC staff and contract employees.

Clearly, this will present our agency with very significant challenges as we proceed to review these applications in a timely manner. In fact, there were concerns expressed by some people that our agency would not be able to handle the extra workload of reviewing a wave of license applications for both power plants and fuel cycle facilities; as well as license renewals and power uprates for existing plants. And the truth is, it has not been easy. But we are doing it. We are staffing up—which means our offices are getting a little cramped; and we have had to locate some temporary office space—but we are meeting our goals. Most significantly, we created an Office of New Reactors that now has a staff of over 400 people.

Agency-wide, the NRC used to hire 30-50 new people per year. But in 2005, we set a goal of 600 new full-time employees over a three-year period. As of right now, it looks like we are going to do a little better than that. In 2007, we hired 441 people—for a net of 219 additional employees; 60% were women/minorities. I emphasize the *net* increase in our workforce, because during this hiring crunch, we are also experiencing a significant number of people retiring. By next year, one-third of our workforce will have three years of NRC experience or less. So in addition to finding qualified people, we are also facing the challenge of knowledge transfer. But let me emphasize that for now and the foreseeable future, our agency has in place the staff, the expertise, and the policies to oversee a safe expansion in domestic nuclear power—assuming that our high standards for safety and security are fully met.

Of course, looking out further, we can see other challenges for employee development. While there will be a growing need for nuclear and mechanical engineers, chemists, and geologists—among others—to address power plant and fuel cycle applications, new technologies will require other kinds of experts. Specifically, while the current fleet of light water reactors was designed and built in the analog electronics era, the next wave of reactors will likely move away from analog toward a new generation of advanced control systems. So the need will be even greater in the area of electrical and electronics engineers, computer engineers, and others with training in advanced control systems.

In addition, we know that nuclear energy beyond the immediate future will involve advanced and innovative nuclear technologies. So our agency needs to develop the expertise to license and regulate the advanced and innovative new reactors and fuel cycle facilities that we anticipate down the road. This will require advanced computer simulation and greater expertise in computer security and cyber threats.

And if the U.S. decides to join the other major nuclear powers of the world and embrace nuclear recycling, the NRC would need additional chemical engineers with a detailed knowledge of reprocessing, actinide chemists, plutonium chemists, and radio-chemists. In addition, nuclear engineers with expertise in transmutation would be required to review fuel recycling facilities. Whenever I address a student audience—and one of my hats as NRC Chairman is "chief

recruiter"—I say: "If you end up joining the NRC you could conceivably help establish an Office of Fusion Reactors." And I tell them, "If you are fascinated by technically complex issues, there will hardly be a more interesting place to work over the next few decades than the NRC."

My concluding words to you, then, regarding your efforts to cultivate more nuclear engineering students is: "Keep 'em coming!"

Thank you again for inviting me to share some thoughts with you.