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"Waste Confidence and Waste Challenges: Managing Radioactive Materials"

Remarks Prepared for NRC Chairman Dale E. Klein

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Good morning. I am delighted to be with you today.

A lot has happened since I was here for last year's conference. In fact, as you know, a lot is happening in the nuclear world in general. It is an interesting and challenging time—for regulators as well as for industry.

In a few weeks the NRC will host the 20th annual Regulatory Information Conference. In my remarks there I plan to mention how the NRC has accomplished a lot in the last 20 years; but the next 20 years are likely to be even more challenging. In fact, some of most significant technological changes we are likely to see will be in the area of managing the fuel cycle, particularly spent fuel.

Re-using and recycling fuel to minimize the amount of waste requiring final disposition seems to be the approach chosen by most nuclear nations. This is not, of course, the path currently being taken by the United States. But rather than pushing the challenge of large volumes of waste off to the future, I think that the next generation of American nuclear scientists and engineers will be more open to the role of advanced and innovative nuclear technologies. Today's students seem to have less phobia about radiation, and they are certainly growing up in a much more environmentally conscious world. So I think that as they take charge over the next two decades, they will be more likely to be engaged in implementing those transformative technologies that are still matters of discussion and speculation for all of us.

I want to say a few words about the proposed Yucca Mountain repository at the end of my remarks. But first I would like to address the subject of low-level waste, then say a bit about the NRC's Waste Confidence Rule, and conclude on the topic of high-level waste.

As all of you know, low-level waste is an area that may present significant challenges in the future. We have become more efficient at controlling and managing low-level waste, but we have not done a good job at increasing disposal capacity. Fortunately, the huge increases in the amount of low-level waste the industry has to deal with have been averted because of plant life extensions. Right now, more than half of the operating nuclear power plants have received or are applying for a 20-year license renewal, thus delaying the massive decommissioning waste that some expected might occur at the end of the initial 40-year license period.

But, of course, life extensions just kick the can down the road. Even with another round of license renewals, giving plants life extensions beyond 60 years, we would still have to confront the immense challenge of decommissioning waste when these plants eventually cease operations. This is something all of us need to think about in the coming years.

I noted last year that we were in the process of doing a strategic assessment of NRC's low-level waste regulatory program. I am happy to report that it was completed in October. This is the first such effort undertaken by NRC staff since 1996. It was prompted, in part, by the prospect of the closure of the Barnwell facility and the concerns raised in reports by the National Academy of Sciences, the Government Accountability Office, and NRC's Advisory Committee on Nuclear Waste and Materials. The strategic assessment analyzed 20 specific activities that NRC could undertake to improve LLW programs. Many were suggested by stakeholders in meetings and formal comments submitted to NRC—including, I believe, by some of you here

today. I thank you for your input.

In anticipation of restrictions at the Barnwell disposal facility this summer and the increased need for storage for Class B and C low-level waste, NRC staff is pursuing several initiatives to ensure the continued safety and security of extended interim storage of this LLW. First, staff will issue revisions to existing NRC guidance on extended interim storage for fuel cycle facilities and materials licensees. This draft guidance has been recently provided to Agreement States for review and will be completed in the near future.

Second, NRC staff is in the process of reviewing LLW guidance that has been prepared by the Electric Power Research Institute for nuclear utilities. If the guidance is found acceptable by staff, then NRC will endorse it in a Regulatory Issue Summary. So we are studying contingencies and addressing some specific challenges. Let me emphasize, however, that I don't foresee any kind of immediate crisis in the disposal of LLW. But now is the time to get things in place so we can avoid a crisis in the future.

On the matter of spent fuel and waste confidence, I would like to take this opportunity to give you a little background and update you on the status of the NRC's waste confidence findings. Some of you may know this already, but I think it may be useful to go over this briefly anyway.

Before the early 1980s the NRC did not look at the back end of the fuel cycle—the spent fuel disposal issue—when considering Environmental Impact Statements for new reactor license applications. That changed as a result of litigation, and the NRC initiated a rulemaking to assess generically the degree of assurance that radioactive waste can be safely stored and managed, and eventually disposed of. This became known as the waste confidence rulemaking, and it provides generic findings pertinent to environmental analyses related to power reactor licensing.

The first waste confidence decision was issued in 1984. In this initial waste confidence assessment, the Commission found:

reasonable assurance that safe disposal of high-level waste and spent fuel in a geologic repository is technically feasible,
that repository capacity will eventually be available,
that high-level waste and spent fuel will be safely managed until repository capacity is available,
that spent fuel generated in any reactor can be stored safely and without significant environmental impacts for extended periods, and
that spent fuel storage will be available as needed.

The initial waste confidence rulemaking also said that we would revisit the issue periodically.

Five years after the first waste confidence rulemaking, the NRC took another look and basically reaffirmed and expanded the original finding. We made it clear that our confidence in the environmental soundness of on-site storage extended for at least 30 years beyond the licensed lifespan of operating reactors, including life-extensions that might occur from license renewals. As a practical matter this means that any new plants, using the same technology for storage, would fall under the same assessment.

In 1999, the agency reviewed the matter again and found that experience and developments in the interim confirmed the confidence we had earlier expressed. The Commission said it would look at the issue again after the ongoing repository process had run its course, or if "significant" and "unexpected" events occurred that warranted a reassessment.

I wanted to provide that brief background because the question of whether the NRC has any plans to revisit the waste confidence rule is something that comes up at every meeting or conference such as this one. I personally do not feel that a new rulemaking is necessary at this time, but the Commission is aware that this is a subject of interest for many of you.

Last year we asked the staff to prepare a memo on this point, as a follow-up to former Commissioner Merrifield's task force on licensing efficiencies. That memo did not propose a comprehensive waste confidence review and rulemaking just yet, but it did say that an assessment or update might consider the following issues:

whether the earlier 100-year confidence in on-site or off-site storage remains valid;
whether fuel from new reactors warrants any possible changes to waste confidence findings;

and whether the Commission's earlier expectations regarding a timeline for a permanent repository should be modified or updated.

Those would be nice clarifications to have, but for the Commission to decide that there is a real need for a new rulemaking would depend on whether the circumstances have significantly changed—for example, if there were some new legislation or policy direction from Congress.

And that brings me back to the matter of Yucca Mountain. The NRC has been preparing to receive a license application for a potential Yucca Mountain waste repository, and DOE has said that it is still on track to submit the application this year. But of course, that would only be the first step. We would need to carefully assess the DOE application and seek additional information that might be necessary. And of course we are anticipating extensive adjudicatory hearings on the application. All that seems to be complicated, however, by the severe budget cuts in the Yucca Mountain program.

Congress passed the Nuclear Waste Policy Act of 1982, and the amendments of 1987, and in all the debates over the years, never altered the statutory obligations that were created for DOE and NRC under the original Act. Legally, DOE and NRC are still bound to the goals set forth in the Act, and the federal government remains on the path set by Congress. But there have been delays and DOE program funding issues that emphasize the need to remain focused on high-level waste management matters.

Under the circumstances, it is not entirely clear to me what Congress expects us to do. Two agencies—NRC and DOE—seem to be in the position of having inadequate funds to meet their statutory obligations within the expected timeframes. It would seem that we need some clarification of Congress's expectations under these circumstances—and in particular, some kind of budgetary relief, or policy redirection.

As a final word, let me just say that I am grateful for the opportunity to speak to you today. There are significant challenges confronting the commercial nuclear power industry, including waste management. We can only meet those challenges if industry and government maintain a good working relationship and open lines of communications. This conference is an important contribution to that ongoing effort.

Thank you.