



# NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

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**Prepared Remarks of NRC Commissioner Dale E. Klein  
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Thank you. I am pleased to have this opportunity to speak to such a large gathering of people from all over the world who have strong stakes in the front end of the nuclear fuel cycle.

There are a number of points I want to make. But let me first say that, as a regulator, my job is to look at the big picture and see how everything fits together. The front end of the cycle is just one piece of a whole, and it needs to be looked at from a broader perspective. The fuel cycle—like a good speech—has a beginning, a middle, and (eventually!) an end. So today, I would like to take a broader look at this subject, including some prospective changes to the regulatory framework on the fuel cycle's front and back ends.

Since I mentioned my role as a regulator, I should also point out that I cannot take a position for or against any nuclear energy-related activities subject to NRC oversight. The NRC's role is to evaluate applications for uranium recovery and fuel cycle facilities, new nuclear power plants, or potential radioactive waste disposal sites. We do this in a responsible and timely manner to ensure that the public and the environment are adequately protected.

One consequence of the renewed interest in nuclear energy is a tendency, by some people, to focus almost exclusively on power plants. But the reality is that there are equally dynamic changes occurring in the fuel cycle arena. Of course, if and when any new plants are licensed and built, this will have a big impact both on the demand for fuel and disposal issues. So let me say a few words about where we stand with new plant license applications.

Over the past few years, there has been an increased interest in constructing new nuclear power plants in the United States. As of today, the NRC has received 18 applications to build 28 commercial power reactors. These new reactor license applications are the first to be submitted in decades. There are several factors driving this trend, including improved technology, new plant designs, global environmental concerns, and better industry and NRC performance over the last 30 years. These factors have led to increased public confidence in nuclear power, which

in turn has provided industry with some encouragement to move forward. I should point out that the interest in new plant licenses is not merely theoretical—site preparation work for new reactors began in earnest last month at a site in Georgia.

In the fuel cycle arena, we are also seeing a great deal of activity regarding fuel cycle facilities. Three facilities are under construction and two more are planned. Naturally, the planned new reactors and fuel cycle facilities are driving up interest in uranium recovery. So we have been receiving applications for new or expanded conventional milling and *in-situ* uranium recovery facilities.

As many of you know, when the price of uranium fell in the early 1980s, conventional uranium mining production in the United States dropped sharply. Many conventional uranium mills ceased operations or closed permanently and began decommissioning and reclamation. Today, the picture is rather different. In fact, the renewed interest in the uranium business is quite dramatic. Five NRC-licensed uranium recovery facilities are either operating or licensed to operate, and six license applications are under review. Based on discussion with the industry, the NRC expects a considerable increase in licensing activity, with as many as 18 additional new applications for mining and *in-situ* uranium recovery facilities in the foreseeable future.

To address the surge in applications, the NRC has undertaken a number of measures to improve the efficiency of our review process. In June of this year, the NRC staff completed a Generic Environmental Impact Statement, or GEIS. This GEIS addresses common environmental issues associated with the construction, operation, and decommissioning of *in-situ* recovery facilities. Site-specific supplemental environmental impact statements will be developed using the GEIS as a baseline. This approach has raised concern among those who already have applications under NRC review. These concerns were carefully considered in developing this approach to assessing environmental impacts from *in-situ* recovery. The agency concluded that the path it has taken will result in a more predictable licensing process that will be more efficient and repeatable than doing complete site-specific environmental impact statements for each facility.

The staff is also working with industry to ensure that license applications are complete and of high quality. Complete, high quality applications save time and money for both the NRC and the applicant. Two workshops have already been held, and a third will be conducted next month. In addition, the NRC, working with the Environmental Protection Agency, has embarked on a rulemaking for *in-situ* recovery facilities that will codify much of the groundwater protection requirements necessary for these facilities. Your active participation in these two initiatives is essential to ensure they arrive at successful conclusions.

This brings us to the final phase of the fuel cycle.

With regard to high-level waste, the NRC received a license application for a potential Yucca Mountain repository in June 2008. Although funding for this project has been severely curtailed, the license application remains under review. The national policy toward the back-end of the fuel cycle is being reassessed, including consideration of geologic disposal and a renewed interest in spent fuel recycling.

I think that most of us in this room would agree that completing the fuel cycle is important. Recycling spent fuel has the possibility to reduce the volume of high-level waste needing underground disposal. This had led some people to conclude that recycling can eliminate the need for a permanent waste repository. That is simply not correct. Recycling can reduce the volume and radiotoxicity of high-level waste, but not eliminate it. Significant amounts of high level waste and spent fuel exist today, and will continue to exist—and we must pursue a safe, secure, and timely solution to disposal.

The United States had a recycling program but ceased activities subsequent to President Carter's 1977 decision to defer indefinitely the commercial reprocessing of spent nuclear fuel due to proliferation concerns. Although President Reagan subsequently lifted this indefinite ban, further commercial recycling was not pursued, primarily due to cost considerations. As a result, there is limited domestic experience with commercial recycling.

Many of the world's nuclear nations are moving toward recycling, if they have not already done so. Whether the United States also takes this route is not for the NRC to determine. But if that choice is made, the NRC needs to be prepared.

One of the long-term priorities for our agency, therefore, is to begin the preparations to determine how recycling facilities will be licensed and how we will maintain high standards of safety and security, while also promoting a strong non-proliferation agenda. Our challenge will be to (1) develop a regulatory framework for commercial facilities, (2) provide guidance to applicants, (3) develop qualified NRC staff to support a timely NRC licensing review, and (4) maintain an effective inspection program.

Whatever happens with respect to recycling, there are still other regulatory challenges we must confront. Two challenges in particular cut across all parts of the nuclear fuel cycle. These challenges relate to low-level waste and radiation protection.

Low-level waste management and disposal will continue to require the attention of the NRC and industry as we go forward. Without adequate low-level waste disposal sites, the NRC would be faced, in all probability, with the problem of ensuring that the absence of disposal capacity for such wastes does not promote unsafe storage of the wastes by generating organizations. This issue has taken on greater significance with the change that has occurred at the Barnwell facility in South Carolina. Since last year, Barnwell accepts waste only from the Atlantic compact states—which are Connecticut, New Jersey, and South Carolina. The reorganization of Barnwell is further evidence—to me, at least—that the regional disposal scheme established by the Low Level Waste Act simply is not working. It is apparent, therefore, that the Commission is going to have to devote considerable time and resources to the issue of low-level waste.

The NRC has already started reviewing its low-level waste disposal regulations. The first step will be the development of a limited scope rule that will require a performance assessment to be done prior to disposal of large quantities of depleted uranium. While this rulemaking may not have broad interest among you, it is important because it will set the stage for the second step.

As a longer term action, the Commission has directed the staff to prepare to risk-inform the waste classification framework. This effort may include pursuit of corresponding legislative changes. The effects of this change to the regulatory framework may be sweeping. Updating the NRC's low-level waste regulations to the current state-of-the-art is an essential element of facilitating a national solution to this problem.

The last area I'd like to touch on is radiation protection, which underlies the low-level waste regulatory update. The NRC is beginning a long process to develop a technical basis to support a possible revision to the NRC's radiation protection regulations. This effort was initiated as a result of the latest recommendations of the International Commission on Radiation Protection, or ICRP, and is intended to bring our regulations in closer alignment with the latest radiation protection guidelines. That said, the Commission has recognized that the current regulatory framework provides for adequate protection of public and worker health and safety, and has directed the staff to engage stakeholders in order to discern burdens and benefits associated with potential rulemaking.

Among the various areas covered by the ICRP recommendations, two are of specific interest to the Commission. The first is the idea of developing separate radiation protection regulations for plant and animal species, which the Commission has strongly opposed. Secondly, the Commission has been concerned about the potential impact of lowering the occupational dose limit effectively to 2 rem per year and has directed the staff to examine how lower dose limits have affected the medical and industrial sectors in countries that have implemented them. Even though possible rulemaking is a few years away, the active participation of industry organizations and radiation protection professionals in this effort is essential from the start. In my view, any changes in radiation policy and regulations must result in important and identifiable economic and social benefits.

In conclusion, the three phases of the fuel cycle are intertwined, and change in one area can, to varying degrees, affect the other areas. So I would urge you all to remain aware of the initiatives I mentioned today and stay engaged as they develop.

I want to close by talking about the future of the NRC on a slightly more personal note. You have probably heard that the President has appointed two nominees to fill the vacant Commission seats formerly held by Pete Lyons and the late Ed McGaffigan. What you may not have heard is that on Friday I sent a letter to President Obama asking him to name one more nominee, so that I can return to academic life at a small school here in Austin called the University of Texas. Let me emphasize that I have been extremely honored to serve the American people as a presidential appointee, first at the Defense Department, and now at the NRC. And because I strongly believe that the NRC needs stability and continuity on the Commission, I intend to retain my seat until my successor is sworn in. I will continue to support the initiatives I have outlined while I remain on the Commission, and I hope that the agency continues on this path after I have finished my service. I hope all of you will remain attentive and involved and will help the NRC address these important challenges.

Thank you. At this point, I would be happy to respond to your questions.