NRC NEWS

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High-Level Waste: Transportation, Disposal, and Yucca Mountain

Remarks of

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at the

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Good morning everyone. I am very pleased to be here today, and to have the opportunity to speak to you at the National Association of Regulatory Utility Commissioners' 2003 Winter Meeting. Let me begin by extending my appreciation to the National Association of Regulatory Utility Commissioners and its subcommittee on Nuclear Issues and Waste Disposal for hosting this very important conference, and to welcome all of you, who are participating in this week's scheduled events. With the number of participants and distinguished representatives here today, it is clear that our domestic utility regulators have a sincere and strong collective interest in the direction the nuclear industry is heading and changes that will be affecting that direction. As most of you are aware, over the last few years the nuclear industry, the public, and the Nuclear Regulatory Commission **(NRC)** have been working together to address many areas of common interests and concerns regarding the NRC's current regulatory system and oversight involvement, and ultimately, to mutually resolve these issues without compromising worker and public health and safety or environmental protection. From my perspective, I view this dialogue as necessary, constructive, and beneficial. When taking on any change, one must remember that the process must always begin with the end-in-mind. Maintaining the safety and health of the public and our stakeholders are that end. Before I begin with my discussion topic, **"High-Level Waste: Transportation, Disposal, and Yucca Mountain,"** I would like to share the results of some of the wide-sweeping changes the NRC has undergone in recent years. These changes

have and are continuing to be integrated in every program throughout the agency, including spent fuel transportation and high-level waste.

Throughout the years, the establishment and implementation of a sound infrastructure to systematically and safely construct, operate, and manage our licensed facilities has been a common goal of both the nuclear industry and the NRC, and overall, we have recognized and shared many successes. While realizing these successes in our programs and efforts, we also have faced a number of shortcomings from which we have gained a great deal of knowledge and experience. Experiencing those short comings, identifying their root-cause, and implementing timely and effective corrective actions have facilitated the maturing of the nuclear industry and have brought us to where we are today. Additionally, advancements in technology and operations, coupled with the industry's continued awareness for improving process safety, personnel training, and management accountability, and most of all, being able to demonstrate safe, effective, and predictable operations, has afforded the NRC the opportunity to assess its existing regulatory and oversight structure and programs to gain better perspective of our own efficiencies and effectiveness. After 25 years of existence and in concert with the nuclear industry, the NRC has undertaken changes of its own and is continually in search of improving its business operations. Over the last few years, the nuclear industry and the public have raised several ideas of interest to the NRC, and have effectively gained the Commission's attention. Ideas that have made us re-think how the NRC currently conducts its business operations, as well as the effectiveness in communicating, "who we are and what we do." As a result, we have put forth and continue to refine a number of initiatives that will allow for a more risk-informed, streamlined, and effective regulatory implementation and oversight process, which ultimately will improve the predictability and objectivity of our regulatory decisions. We have actually embraced many of these initiatives in the NRC Strategic Plan, which also includes performance goals and metrics, so that we can measure and evaluate our performance. Specifically, the four overarching performance goals that are a part of each of our regulatory programs include:

Maintaining safety, protection of the environment, and the common defense and security;

Increasing public confidence;

Making the NRC activities and decisions more effective, efficient, and realistic; and

Reducing unnecessary regulatory burden on stakeholders.

From rulemaking to standard review plan development, including licensing, inspection, and enforcement, the NRC's fuel-cycle, enrichment, reactor, spent-fuel, and waste management activities are being examined to further clarify our regulatory role and to streamline and improve the effectiveness and efficiency of our regulatory and oversight operations. In these same technical areas, the NRC continues its role with respect to external regulation of certain Department of Energy programs, such as high-level waste disposal, and mixed-oxide fuel-fabrication. Along these paths, we have also concentrated on establishing better lines of communication and more openly engaging and responding to both our stakeholders and the public. Regulatory formulation, decision making, and improving our objectivity and response time to submitted questions, comments, and petitions, are areas where the NRC has become more open, efficient, and transparent. From the examples provided, you can see that the NRC is part of and not separate from this changing environment. We are moving toward a less prescriptive, more risk-informed regulatory approach for all of our programs. However, I strictly emphasize, our primary mission, to **"protect public health, safety, and the environment"** and to **"promote common defense and security"** has not, and will not change.

Today, I would like to focus on the latter portion of the nuclear fuel cycle, and provide you with a panoramic look at some of the issues and our progress associated with the transportation of spent nuclear fuel and the disposal of that spent fuel and high-level waste in a licensed repository. First, let's look at spent fuel and high-level waste transportation.

Recently, the press and some stakeholders have raised concerns over the security and safety of transporting spent nuclear fuel and high-level waste. It is worth noting that the federal regulation of spent fuel transportation is shared between the U.S. Department of Transportation ***(DOT)*** and the NRC. DOT regulates the transport of all hazardous materials, including spent fuel, and has established regulations for shippers and carriers regarding, among other things, radiological controls, hazard communication, and training. The NRC regulates spent fuel transportation through a combination of safety and security requirements. We establish the design standards for the casks used to transport spent fuel, and review and certify the cask designs before their use. We also conduct an inspection and enforcement program, and review and approve physical security plans for spent fuel shipments. Over the last 30 years, more than a thousand shipments of commercially generated spent nuclear fuel have been made throughout the United States without causing any radiological releases to the environment or harm to the public. Most of these shipments occur between different reactors owned by the same utility to share storage space for spent fuel, or they may be shipped to a research facility to perform tests on the spent fuel itself. By any measure, this is an excellent safety record. However, this does not preclude the possibility that undetected weaknesses may exist. Because of this possibility, we are continually examining our transportation safety program. As an example, the NRC initiated a Package Performance Study to examine cask performance under severe impact and fire accident conditions. These studies will continue with full-scale cask testing to confirm computer models of cask response to severe accident conditions. As a part of this continuing examination, the staff also analyzes appropriate national transportation accidents, such as the 2001 train tunnel accident in Baltimore, to determine if our transportation requirements need to be modified. Finally, we are also sponsoring a study to update the evaluation of cask response to acts of sabotage. In the future, the Department of Energy will use NRC-certified casks when shipments of high-level waste begin. Next, let me tell you about the progress the NRC has made in preparation to receive a license application for the Yucca Mountain High-Level Waste Repository.

Last year, several events occurred that clear the way for NRC to receive an application from the Department of Energy for the construction of a permanent high-level waste repository at Yucca Mountain. A year ago this month (February), the Secretary of Energy made a formal recommendation in favor of the Yucca Mountain site as the repository for high-level waste. The President endorsed the Secretary's recommendation. Shortly thereafter, the Governor of Nevada gave notice of disapproval of that recommendation, as allowed by law, which transferred the issue to the Congress. In July, the Senate granted the final approval for the consideration of Yucca Mountain as the nation's high-level waste repository. The Department of Energy will now submit an application for construction to the NRC, which is currently planned for December 2004. Once we receive the application from the Department of Energy, the law provides NRC up to four years, including the completion of the administrative proceedings, to decide whether to grant the license.

In preparation to receive the application, the NRC has completed several important steps and actions. First, in late 2001, we issued the technical requirements a repository must meet in order to be licensed by NRC in 10 CFR Part 63. These are the risk-informed regulations encompassing both pre-closure and post-closure repository operations, and include the Integrated Safety Analysis approach for the pre-closure performance period, and the Total System Performance Assessment approach for the post-closure performance period. Second, the staff recently issued, as a draft for public comment, the

Yucca Mountain Review Plan, which when finished, will guide the agency's review of the forthcoming license application. This Plan is designed to ensure the quality and uniformity of our licensing reviews. We have received numerous comments from stakeholders and members of the public on the Plan, and the staff is currently working to address those comments and issue a revised Plan in its final form. Lastly, and to a large part, most important, the NRC has been working to involve stakeholders and members of the public in all aspects of the pre-licensing activities for Yucca Mountain to assure that expressed safety concerns will be addressed during the upcoming license review process.

As you can tell, a lot of work has been done, . . . but remember, we have yet to receive the Department of Energy's application! Once the NRC receives that application, the work will really begin. First, there will an acceptance review, which is a preliminary screening of the application to see whether it contains enough information to establish compliance with the regulations. This does not judge the technical adequacy of the application, but rather, is an evaluation to determine whether the submitted information, if found to be valid, would be sufficient to support granting a license -- in other words, whether the application is ready for the NRC staff to begin its detailed technical review. Even at this early stage of the review, the NRC will face some unique challenges. You may have heard about the 293 agreements in which the Department of Energy committed to provide additional information on technical issues associated with the Yucca Mountain repository. At the time of the acceptance review, the NRC will have to ensure that the information provided under these agreements results in a full and complete license application. All this must be accomplished within 90 days of receiving the application.

CLOSING REMARKS

In closing, you can see that past initiatives the NRC undertook to reform its regulatory approach have resulted in significant changes in all NRC programs, including spent nuclear fuel transportation and high-level waste. A lot has happened for these two programs in the last year. The NRC has accomplished a lot and is well positioned to meet the upcoming challenges as a license application for the construction of the Yucca Mountain repository is received. Throughout our past efforts, the NRC has included our stakeholders and the public and has made publically available, related rulemaking, licensing, and inspection information. The objective of this important step is not to try and please every individual, but to demonstrate that the NRC conducts its business operations in a fair, objective and independent manner, while ensuring adequate protection of public health and safety, and the environment. This approach helps to build public trust, gain public confidence, and demonstrates that the regulatory process is being carried-out in a transparent manner. Establishing and implementing formal public participation mechanisms, such as public meetings and workshops, addressing and reconciling public concerns in a fair manner and with an open mind, using plain language and terminology that are generally understood or recognized, not only help to establish public trust and confidence, but to maintain it as well. Clearly communicating our thoughts and processes to our stakeholders and the public, involving them through formal participation mechanisms, and demonstrating a general effort to be open to constructive criticism, are elements that are essential to effective and successful regulation and program implementation. These interactions provide early signals regarding dominant interests and concerns of those individuals and communities that will be directly or indirectly impacted by the action. By remaining receptive and responsive to those signals, the NRC continues to improve its credibility as an open-minded objective regulator, while at the same time, ensuring a realistic, predictable, and a stable regulatory framework, that is protective of the worker, the public, and the environment.

I hope that the insights and examples I've shared with you today about our spent fuel transportation and high-level waste programs provide a clear picture of some of the challenges the NRC will face, and the progress we've made to address those challenges. Thank you.