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THE UNIQUE ROLE OF A REGULATOR IN ENSURING
SAFE MANAGEMENT OF HIGH-LEVEL RADIOACTIVE WASTE

Remarks of
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at the
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MANAGEMENT CONFERENCE
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Good Morning. I am very pleased to have this opportunity to address you today at the onset of the third annual International High-Level Radioactive Waste Management Conference. The theme of this year's conference, "Promoting Understanding Through Education and Communication," is of particular interest to me as a former educator. It also relates well to my message today regarding the Nuclear Regulatory Commission's (NRC) unique and independent role as a regulator in the civilian radioactive waste management program.

I and my fellow Commissioners view the management and disposal of all radioactive wastes as one of the most critical issues facing our nation today. Radioactive wastes must be safely managed in order to protect the public and the environment, now and for many generations in the future. It is the NRC's responsibility to ensure that radioactive wastes generated by its licensees are safely managed, stored, transported, and disposed of.

NRC must pay particular attention to discharging its obligations by actions that are fully open to the public's view, and carried out objectively and independently, always adhering to the very highest professional standards. Throughout all we do, NRC must strive to communicate with all interested parties to assure our awareness of all important considerations, and to build confidence that our decisions and actions are credible and understandable.

NRC Waste Management Activities

In the area of special interest to this conference, "High Level Radioactive Waste," the NRC is responsible for ensuring safe management and disposal of civilian-use spent nuclear fuel and continues to oversee DOE activities at the former commercial reprocessing site at West Valley, New York. NRC also is responsible for ensuring the safe management of commercially generated low-level, "Greater-than-Class C" or intermediate level, and mixed radioactive wastes, as well as tailings resulting from uranium milling operations.

NRC's responsibilities for management of low-level radioactive wastes and uranium mill tailings are fulfilled by some States through an Agreement whereby the states have adopted NRC's regulatory framework and have demonstrated an ability and commitment to fulfill these responsibilities.

NRC also is responsible for ensuring that facilities and sites used by its licensees are decommissioned and decontaminated so that they may be released for unrestricted use once a license is terminated. This activity has received much attention over the past several years through the NRC's review of licensed sites that need substantial cleanup prior to license termination and through the Commission's examination of previously licensed sites that require additional efforts to comply with existing cleanup criteria. A significant element in this program will be the NRC's development of cleanup criteria through an enhanced participatory rulemaking process in which we hope to involve a wide breadth of interests.

While the challenges of other NRC waste management activities are very important, I will focus the remainder of my remarks on the NRC's role in the management and disposal of spent nuclear fuel.

Handling, Transportation, and Storage of Spent Nuclear Fuel

NRC's role in the management of spent nuclear fuel divides into three principal areas: handling of spent nuclear fuel at the reactor sites; transportation; and storage of spent nuclear fuel at reactor or away-from-reactor sites. A regulatory framework has been developed for these areas based on more than 30 years of operating experience. Most existing facilities have performed quite safely under this regulatory framework.

The NRC and its licensees have amassed many years of experience with handling of spent nuclear fuel at reactor sites. Spent fuel is regularly moved from the reactor to on-site storage during the life of the plant. The NRC constantly monitors fuel handling activities to assure safety; several decades of experience have

demonstrated to NRC and to the public that this is readily achievable.

Many years of experience have also been gained in the transportation of spent nuclear fuel. Between 1979 and 1991 (a period for which NRC has good records), there were over 1,200 shipments of commercial spent fuel within the U.S., totalling more than 1,000 tons of spent fuel. Approximately 90%, or 1,100, were by highway and the remaining 10% (100) by rail. Nine hundred were domestic shipments of spent fuel between commercial reactors and DOE facilities or shipments between commercial reactors and on-site storage facilities. The remaining 300 were import shipments, returning research reactor fuel to DOE facilities at Savannah River or Idaho National Laboratory. Throughout these shipments, there has not been a single incident or accident which resulted in a radiological release or in an injury or death from radiological causes.

The NRC and its licensees have had equally extensive experience with the safe storage of spent nuclear fuel in on-site reactor storage pools. At a few reactor sites, these wastes are also stored in independent spent fuel storage installations (ISFSI). These are engineered facilities that provide additional storage capacity beyond the spent fuel pools. Existing regulatory requirements for these installations can also be applied to a monitored retrievable storage installation for storage of spent fuel prior to final disposal at a permanent repository.

As a result of the "Waste Confidence Proceeding," in 1984 the Commission published its finding that "radioactive wastes can be safely stored onsite past the expiration of existing [reactor] facility licenses until offsite disposal or storage is available." In a 1989 review of this waste confidence decision, the Commission extended this finding to state that "spent fuel generated in any reactor can be stored safely and without significant environmental impacts for at least 30 years beyond the licensed life for operation...of that reactor at its spent fuel storage basin, or at either onsite or offsite independent spent fuel storage installations."

The Repository Program

The last, but certainly not the least, of NRC's responsibilities for spent nuclear fuel, which I will now simply call High Level Waste (HLW), is assuring that HLW is permanently and safely disposed of in a geologic repository. In contrast to the management of HLW, its disposal is a first-of-a-kind effort from many perspectives.

A geologic repository for disposal of HLW in the United States will be the first U.S. facility designed to control releases of

radioactive material for up to 10,000 years; the first U.S. facility for which performance of a number of barriers must be projected for at least 10,000 years; the first Federal HLW facility for which the NRC will license construction and operation; the first Federal HLW facility that is not being built for defense purposes; and the first licensing proceeding that will involve so many interested parties.

In recognition of the first-of-a-kind nature of the repository program, Congress assigned a unique role to the NRC in fulfilling the Nuclear Waste Policy Act (NWPA) of 1982 and the Nuclear Waste Policy Amendments Act (NWPAA) of 1987. The Department of Energy (DOE) is responsible for designing, constructing and operating the repository; the Environmental Protection Agency (EPA) is responsible for developing generally applicable environmental standards; and the Nuclear Regulatory Commission (NRC) is responsible for licensing the repository, based in large part on a determination of compliance with the EPA standards.

However, in addition to its classical role in licensing, the law also requires that the NRC comment on a number of DOE documents during pre-licensing and involve other interested parties. This licensing mode is unique for the NRC. In other program areas, the NRC does not, and is not required to, have such extensive interactions with a potential licensee until a license application has been filed.

This new requirement presents the NRC with constant challenges -- we must effectively communicate with the DOE and yet maintain our independence from it. We must also effectively communicate with host States, affected Indian Tribes, and affected units of local government, and be open to the public so that they may develop confidence that the NRC will objectively and impartially fulfill its responsibility to protect their health and safety and the environment. Let me describe how we are meeting these potentially conflicting requirements.

Communication

The first challenge to NRC during the pre-licensing consultation and guidance phase is in communicating effectively with the potential licensee. In this first-of-a-kind project, technical and procedural issues will likely continue to be raised and addressed throughout the life of the project. A further complication arises because the regulatory apparatus for this program will continue to evolve through much of the pre-licensing phase.

The NRC and DOE have developed a program for bilateral exchanges during this phase of consultation and guidance. While it has taken some time to work out acceptable mechanisms, we think that

the program now enables the NRC to communicate effectively with the DOE on technical and regulatory issues. In brief, this program includes ongoing reviews of DOE documents and activities by the NRC, with guidance to DOE based on these reviews to help ensure that DOE is proceeding in an acceptable manner and will develop a high-quality License Application. The NRC is also conducting a systematic regulatory analysis of its rules to identify uncertainties in the regulations, or technical uncertainties related to implementation of the regulations, and is developing regulatory requirements and guidance which reduce uncertainties and provide guidance to DOE on acceptable methods for complying with the regulations.

NRC has devoted considerable effort to stating the "rules of the game," as called for by DOE's Dr. John Bartlett in a public meeting with the Commission last December. The earliest agreements reached involved a series of procedural matters that cover such areas as: interactions between the staffs of the two agencies, communications, and providing for the participation of states, Tribes, and affected units of local government. From 1985 through 1987, NRC and DOE reached some important understandings regarding implementation of the basic long-standing NRC licensing philosophy which clearly places the burden of proof on a license applicant to determine and support decisions regarding collection of sufficient data to demonstrate compliance with regulatory requirements. Because a repository is a complex system subject to both the NRC and EPA regulations, iterative performance assessments are critical to making such decisions during the pre-licensing phase. Once DOE has made its calls and substantiated them, it is the responsibility of the Commission to comment on their adequacy. NRC is constantly developing appropriate licensing guidance documentation, including regulatory guides, staff technical positions, and review plans, all of which are available to DOE and all interested parties.

The Commission encourages DOE to consider carefully those ongoing activities that have been successfully implemented during this pre-licensing phase and which we believe have demonstrated that the regulations are appropriately definitive.

The Commission has encouraged the DOE to recognize the benefits of minimally prescriptive regulation, which allows good managers to evaluate and implement a program in a manner they judge to be most effective. The NRC's role is clearly to define the applicable regulations and what is needed to demonstrate compliance with them before a license application is filed (which is the objective of our pre-licensing consultation and guidance activities), but not to direct specific activities.

NRC has been actively involved in review of the HLW standards under development by the EPA for more than a decade. While we would like to see these promulgated soon, so as to provide the basis for the NRC's regulatory framework, we believe that there still are significant concerns with these proposed standards that must be addressed.

I also want to stress the importance of NRC's communication with the public. There must be effective dialogue with the public on regulatory programs. Our citizens must trust us and be confident that radioactive wastes can be safely managed and disposed of.

NRC's Independence

This brings me to the second challenge of NRC's role during the pre-licensing consultation and guidance phase -- that of maintaining our independence from the prospective licensee.

Close technical interactions with the DOE are not only required by Congress, but are needed for the NRC to make judgments on the ability of a repository to protect the public and environment. However, the NRC must take all necessary steps to assure that this closeness does not affect its ability to make independent judgments. The NRC recognizes that the final decision to construct and operate a repository must be based on objective, unbiased assessments of all information.

It has been difficult to define our proper relationship with the DOE in the high level waste program. Not only are we involved in pre-licensing activities for a first-of-a-kind facility, the repository, but we are also dealing with a prospective licensee that has never before had to obtain an NRC license. DOE has come to understand the regulatory process through our mutual interactions. However, development of this understanding has been difficult and time consuming, as illustrated in the protracted development and implementation of an effective quality assurance program over the past decade.

Not only has it been difficult for the DOE to understand the proper relationship between it as a licensee and the NRC as a regulator, but it has been, and will continue to be, difficult for the public to understand this relationship and the important distinction between these two Federal agencies. To a member of the public, the Federal government often appears to be a vast monolithic entity. It is difficult to see a distinction, especially because two agencies sprang from the same parent, the Atomic Energy Commission. Ever mindful of this history, the NRC must not only maintain the independence it needs to fulfill its responsibilities, but it must also continually demonstrate through its actions that independence to the public.

One of the initiatives that NRC has taken to assure its independence is in the establishment of the Center for Nuclear Waste Regulatory Analysis (CNWRA) in San Antonio, Texas. The CNWRA is a Federally Funded Research and Development Center whose charter is to provide sustained, conflict-of-interest free, high-quality technical assistance and research in support of NRC's HLW management program. The Center is charged with establishing a highly competent, stable technical group of experts who make independent objective recommendations on the complex technical issues associated with repository licensing. Through the Center, the NRC conducts technical studies and assessments in areas such as: (1) a structured and comprehensive analysis of the existing regulations to identify gaps and uncertainties; (2) an evaluation of the long-term capability of a geologic setting and of engineered barriers to isolate nuclear waste; (3) the development of a capability to assess the integrated performance of a repository with its natural environment to maintain long-term waste isolation; and (4) the development of performance assessment capabilities needed to assure protection of the public during the design, construction, operation, and closure of a repository. As needed, the Center also will support NRC during the formal licensing process, including contributing oral and written testimony on technical questions during adjudicatory hearings.

NRC's Commitment to Openness

The last challenge that I intend to address today is that of openness to the public. The NRC operates in a "fishbowl" -- that is one of the obligations that we have in all of our regulatory programs. Nuclear regulation is the public's business, and it must be transacted publicly and candidly. The Commission is committed to keeping the public informed about, and providing opportunities to participate in, the regulatory process. One significant difference between the repository program and all other previous licensing activities is the large number of participants and interested parties involved.

In addition to the NRC's normal process for development of rules and guidance, which includes publication of drafts for public comment, the NRC has taken steps to ensure that its activities in the repository program are conducted in an open and responsive manner. The staff continues to identify and resolve issues at the staff level in providing guidance to DOE through letters, staff technical positions, and regulatory guides. Drafts of all of these documents are made available for public comment. In addition, issue identification and resolution are often discussed in meetings with DOE in which the State of Nevada and affected units of local government are invited to participate and at which the public can observe. Any agreements between the NRC staff and DOE regarding new issues or issue resolution are documented along

with views of other participating parties in meeting minutes, which are sent to DOE with copies to the State of Nevada, affected units of local government, and the NRC's Public Document Room. The State of Nevada and affected units of local government have actively participated in these meetings.

However, it should be emphasized that unless resolution of an issue goes to rulemaking, resolutions addressed in guidance documents or meetings represent "closure" of issues only at the staff level. The term "closure" does not mean that any party to an eventual licensing proceeding is foreclosed from raising questions about an issue or submitting evidence relevant to an issue. DOE is entitled to decide to cease searching for additional information regarding a technical issue based on interactions with the NRC, but DOE accepts the risk of doing so. As noted in 10 CFR 60.18(1), the reviews of site characterization activities carried out under the rule are considered informal conferences between a prospective applicant and the staff. They are not part of a proceeding under the Atomic Energy Act of 1954, and do not constitute a commitment to issue any authorization or license, or in any way affect the authority of the Commission and the Atomic Safety and Licensing Board.

The Commission was most recently reminded of the public's perception of the relationship between DOE and NRC following Chairman Selin's visit to the Yucca Mountain site on January 13th. The press coverage of this visit carried the State's criticism of the seemingly close relationship between the DOE and the NRC, and as a consequence questioned the NRC's ability to make independent regulatory judgments. Upon the Chairman's return, the General Counsel and the staff were requested to review existing policies and procedures to ensure that there is openness in the program and that the staff's practices adequately implement those procedures. No significant deficiencies were uncovered as a result of this review.

The "resolution" or "closure" of issues in guidance, correspondence and open meetings with DOE is a topic of specific concern to the State of Nevada. This concern was recently addressed at the February 6, 1992, NRC-DOE management meeting attended by the State of Nevada. The parties to this meeting have agreed that, at this time, issues are "resolved" or "closed" only at the staff level. Issues will be finally and completely resolved only in the licensing proceeding or by rulemaking after public notice and comment.

The staff plans to conduct a training course for all appropriate NRC employees and representatives of the CNWRA on the policies and procedures regarding openness with the State of Nevada and affected units of local government. This training will include a

reminder as to the non-binding nature of the terms "resolution" or "closure" of issues during the pre-licensing phase.

Conclusion

The three challenges that I have discussed here are not the only ones the Commission faces in this program. I could go on to discuss the unique technical challenges faced by the regulator and other parties, but I realize that you have the rest of the week to address those matters.

I would like to leave you with the message that I and my fellow Commissioners view the safe management and disposal of radioactive waste to be among the most critical national objectives and at the top of our own priority list.

NRC is moving forward with a multi-faceted program to assure that when DOE submits an application, we will be ready to review it and able to make a licensing decision within three years after its receipt as required by statute. It is the Commission's sense that the relationship between DOE and NRC must be and is appropriately formal and independent. There is a clear need for dialogue in this pre-licensing period to assure that technical issues and positions are understood prior to DOE's development and submittal of a license application. However, we must be open in all of our dealings with DOE and others. There is no place for secrecy in this matter involving so much public trust. While developing disposal facilities for all radioactive wastes has been slow, there has been significant progress. The NRC will continue to support that progress and will continue to focus on improving its regulatory framework. We invite comments and suggestions from the DOE, EPA, the State of Nevada, affected units of local governments, and others, including the public, on how to improve this regulatory framework. We are committed to addressing these comments through a process that is open to the public and in a manner that will not jeopardize our independence.