



NRC NEWS

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"Nuclear Regulatory Outlook, A Panoramic View"

Remarks by

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Commissioner

United States Nuclear Regulatory Commission

at the

Nuclear Energy Institute Fuel Cycle 2002 Conference

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Chicago, Illinois

Good morning everyone. It's a great pleasure for me to be here today and to have the opportunity to speak to you at the Nuclear Energy Institute's Fuel-Cycle 2002 conference. Let me begin by extending my appreciation to the Nuclear Energy Institute for hosting this very important conference, and to welcome all of you participating in this week's scheduled events. With the number of participants and representatives here today, it is clear that our national and international nuclear communities have a sincere collective interest in the direction the nuclear industry is heading and changes that will be effecting that direction. As most of you are aware, over the last few years the nuclear industry and the Nuclear Regulatory Commission (**NRC**) have been working together to address industry's 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.

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 experienced a number of challenges from which we have gained a great deal of knowledge and insight. Experiencing such challenges and most of all, being able to resolve them and move forward, has facilitated the maturing of

the nuclear industry and brought us to where we are today. With a continuance for improving process safety and the predictability of operations performance, and most importantly, having effectively demonstrated such improvements over the course of time, it has prompted the NRC to assess its existing regulatory and oversight infrastructure and programs to gain better perspective of its own effectiveness and efficiencies. 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 core operations.

With respect to the challenges currently before us, as well as those that have yet to come, we are all well aware of the diversity that they present. Prior to the terrorist attacks of September 11th, we were primarily dealing with certain aspects of existing challenges, such as: (1) The changing economics of nuclear power generation; (2) How to be fiscally responsible in regulating a depressed uranium recovery industry; (3) Preparing for a MOX construction authorization request; (4) Preparing for the transition of additional NRC licensees to Agreement States; (5) Addressing the possibility of having two uranium enrichment applications for gaseous centrifuge; (6) Gearing-up for a Yucca Mountain Site Recommendation and potential license application; and (7) Other important materials related issues, such as the control and tracking of sealed sources and devices. Although the national and international importance of these items remains the same, the environment in which they will operate has significantly changed as a result of September 11th.

My topic of discussion, **“Nuclear Regulatory Overlook, A Panoramic View,”** addresses two areas of interest: (1) Where regulatory and oversight initiatives have been impacted the most and where significant changes have already taken or are in the process of taking place; and (2) Nuclear security following the events of September 11th.

While the foundation of the NRC’s system for licensing, regulating, and overseeing nuclear facility construction and process operations is prescriptive in nature, it has adequately demonstrated and proven its effectiveness in maintaining safe operations, and in protecting our workers, our public, and our environment. Over time as with most situations, experiences are realized, lessons are learned, and improvements are made, therefore, change becomes inevitable. Both the nuclear industry and the NRC are experiencing such changes and are working together toward resolution. As evidenced by an excellent and long-standing safety record, one cannot dispute the value and necessity of having an independent set of standards, codes, and regulations for an industry where consequences have been and can be devastating, and where the public is extremely skeptical. This is an area where I believe the NRC and the nuclear industry share a common appreciation.

Over the last 25 years the nuclear industry has experienced advancements that have allowed for major improvements in many nuclear arenas. These experiences and improvements have provided many beneficial insights, specifically in the areas of nuclear safety and engineering. Complemented with a continued focus on improving worker safety awareness, these advancements have not taken place without recognition. Though certain events have challenged us, and the unknowns will continue to do so, one cannot dispute industry’s continued success in improving its overall performance and in promulgating the importance and necessity of worker and public health and safety. This path of continuous improvement and demonstrated success, along with the NRC’s long-standing, effective, and continual involvement, has allowed for the NRC to confidently move forward in enhancing its regulatory development, licensing, inspection, and enforcement programs. As brought to our attention, and through our own self-assessments, we have worked and are continuing to work toward refining and balancing our regulatory and oversight programs to become more risk-informed and performance-based.

Over the last two years, the NRC staff has worked diligently on conducting its core regulatory and oversight responsibilities in a more risk-informed performance-based manner, focusing on areas that present greater risk- and safety-significance, rather than on areas that present little or none. I recently addressed this very issue with the staff at a Nuclear Materials Safety and Safeguards all-hands meeting, and I will share with you the very position that I shared with them. **“The challenge for the NRC in being able to effectively transition to the risk- and performance-based culture is not one of addressing whom and/or what to protect or even the adequacy of our protection requirements. But rather one of defining how to adequately structure our regulations, as well as our oversight and enforcement cultures and procedures, so that they become more appropriately aligned with the risk-informed performance-based approach.”** In doing this, I believe that as a whole, our regulatory framework will continue to become more meaningful and able to provide improved results not only to our licensees, but also to our stakeholders, to the public, as well as to the regulator. I also believe that having a framework that is centered on risk significance, related hazards, security and control of radioactive material, and potential consequences, provides the transparency that is needed to clearly identify what is being protected and the requirements needed to provide reasonable protection assurance. Although not comprehensive, some of the most recent accomplishments indicative to this approach includes staff’s work on: **(1)** 10 CFR Part 63 regarding Yucca Mountain and the draft Yucca Mountain Review Plan; **(2)** revisions to 10 CFR Part 70 relating to the integrated safety analysis of fuel-cycle facilities and its Standard Review Plan; **(3)** the revisions currently being considered to 10 CFR Part 71 for packaging and transportation of radioactive materials; and **(4)** the direct results that you have experienced with the NRC’s power reactor license renewal process.

With respect to these examples, I want to share with you some additional insights regarding their status and where we go from here.

RULEMAKING AND LICENSING - What we’ve done and where are we headed?

Following EPA’s June 2001 issuance of its final Yucca Mountain radiation protection standards as contained in 40 CFR Part 197, the NRC incorporated conforming changes to its draft final 10 CFR Part 63 regulations, **“Disposal of High-Level Radioactive Wastes In a Geologic Repository at Yucca Mountain, Nevada,”** and issued the final rule in November of that same year. In early March 2002, staff placed the related **Draft Yucca Mountain Review Plan** on the NRC’s web-site and in late March, placed it in the Federal Register for public comment. As we are all aware, after two decades of site research and characterization and with the inclusion of the NRC’s site sufficiency comments, the Secretary of Energy recommended the Yucca Mountain site to President Bush as being suitable for repository development. With the President’s endorsement of the Yucca Mountain recommendation, the stage has finally been set for the ultimate decision. With the 60-day appeal process granted to the State of Nevada, followed by the statutory 90-day continuous Congressional session, we can anticipate a final decision in the August time-frame.

In preparing our Agency and staff for a license application from DOE, should that occur, the completion of the aforementioned standards, implementing regulations, and review plan is most essential. Additionally, and as a clarifying point, one must remember that the siting process is exclusive to any licensing process that the NRC would conduct if an application were submitted. The reason I mention this, is because questions have been continually raised regarding NRC’s involvement in the DOE Yucca Mountain effort, and I want to clarify the difference between the NRC’s pre-licensing involvement and the licensing process, which are separate and distinct. With the number of issues

remaining to be resolved, much important work lies ahead in order to ensure a high-quality license application. **There are Key Technical Issues, 37 Subissues, and approximately 258 out of 293 Agreements.** However, regardless of the work that lies ahead, we must also be conscious of all that has been resolved. As controversial as the Yucca Mountain repository has been, I have sensed more open views toward this effort as a result of the horrific events of September 11th. Since these events, there has been increased concern about spent-fuel pool security in particular, with added emphasis on the number of spent-fuel pools currently storing licensed material. At least in some quarters, this has sparked a renewed interest in the security benefits of storing spent-fuel in one location rather than at 104 commercial power reactors located in 31 States, and I personally support this position as well.

MOVING ON to our Part 70 initiatives.

In September 2000, The amended 10 CFR Part 70, **“Domestic Licensing of Special Nuclear Materials,”** was issued with the new Subpart H, **“Additional Requirements for Certain Licensees Authorized to Possess a Critical Mass of Special Nuclear Materials,”** and in December 2001, the related Standard Review Plan (SRP) was also issued (NUREG - 1520). I’d like to recognize that both industry and the NRC staff worked very hard on making the SRP a meaningful risk-informed performance-based review plan, and that ample time was specifically spent on Chapter 3, **“ISA and ISA Summary”** and Chapter 11, **“Management Measures.”** I view the SRP as a safety-based template that provides a guided path in making one focus on what’s important to safety and how to manage the associated risks. You will also find that it is consistent in emphasizing that industry alternatives can be proposed which should provide the necessary flexibility and burden reduction for the fuel-fabrication sector. It allows for the industry to be pro-active in identifying different but comparable approaches and solutions in establishing its licensing basis. I view the SRP as being detail oriented from a safety-based standpoint, but not prescriptive, and I remain supportive of its continued use.

Reactor License Renewal

Another highly visible effort is the area of reactor license renewal. I am pleased to tell you that the power reactor license renewal process is progressing well, extremely well by most measures. The NRC renewed the operating licenses for both units of Calvert Cliffs on March 23, 2000; for the three units of the Oconee Nuclear Station on May 23, 2000; for Arkansas Nuclear One, Unit 1, on June 20, 2001; and for both units of Edwin I. Hatch on January 11, 2002. We continue to meet or beat our timeliness goals for the completion of license renewal reviews. These goals include the completion of the license renewal review, from the time of receipt of the application, in 25 months for reviews which do not have a hearing and 30 months for those reviews for which a hearing is requested. Perhaps the most important performance indicator that speaks to the success of the reactor license renewal program is the growing industry interest and queuing-up. We currently have 15 units under review for license renewal and licensees for approximately 25 additional units have indicated their plans to submit a license renewal application within the next 2½ years.

Transportation

Perhaps some of the most cross-cutting changes to date deals with our spent-fuel storage and transportation program. The amended 10 CFR Part 71, **“Packaging and Transportation of Radioactive Material”** was recently issued for public comment. Conforming changes were incorporated into the rule to appropriately align its contents with the transportation safety standards of the International Atomic Energy Agency and certain NRC updates were made as well to make its

contents more risk-based. This effort also took into consideration the contents of NUREG/CR-6672 (March 2000), which focused on the reexamination of spent fuel shipment risk estimates by updating shipping parameters, cask designs, and dose models, as well as by validating assumptions and models used in spent fuel risk analysis. Which now gives consideration to new cask designs, including dual-purpose casks.

Probably one of the most significant efforts currently taking place within the transportation safety area, is the work being conducted within the context of the Package Performance Study (PPS). The scope of the PPS examines the response of spent fuel transportation casks to severe impact and fire accidents. This effort is being conducted within two NRC Program Offices, the Spent Fuel Project Office and the Office of Research, and is projected for completion in the 2005 time-frame. Additionally, the NRC has also contracted with the National Academy of Sciences to conduct an independent review of the PPS test and evaluation plan, which in summary, includes the physical testing of full-size transportation casks and spent fuel components. The physical testing results will be used to validate finite element analysis codes, to update accident databases, and to redevelop accident event trees.

Like Yucca Mountain, development of the PPS was also in the works prior to the events of September 11th. And also like Yucca Mountain, the interest in this effort has significantly increased. Although recognizing and understanding the safety and security benefits of conducting such a study, I don't think that anyone ever imagined how much interest, mainly from a security perspective, it would attract. Since the PPS involves the actual physical testing of full-size transportation casks, as well as spent-fuel components, the results obtained will be critical to the spent-fuel transportation industry, to the NRC, to the Department of Energy's Yucca Mountain program, and to the entire public community, both nationally and internationally.

In-line with the 10 CFR Part 71 rulemaking effort, 10 CFR Part 72, **"Licensing Requirements for the Independent Storage of Spent Nuclear Fuel and High-Level Radioactive Waste,"** amended its Part 72.48, **"Changes, Tests, and Experiments"** change control process in April 2001, allowing Certificate of Compliance (CoC) holders to make design changes without prior approval of the NRC. Prior to this change, only licensees' could make such changes. Lastly, we have been working very hard to better streamline our CoC rulemaking and amendment process. NRC staff has made substantial improvements to shorten the rulemaking process and to make it more efficient and effective. To streamline the internal rulemaking review process, the NRC developed standard language that is used in CoC rulemakings to add new cask systems to our General License listing. This has allowed staff to reduce time for internal NRC concurrence from 3 weeks to 1 week.

We have also developed standard language for CoC amendments that has on average, reduced our review time for the amendment process to less than 4 months (where previous efforts averaged between 6 and 9 months).

THE OVERSIGHT PROCESS - What we've done and where are we headed?

Nuclear Power Reactors

As you are aware, the new Reactor Oversight Program which provided sweeping changes to our inspection, assessment, and enforcement processes was implemented in April 2000. In this process, the NRC evaluates plant performance by analyzing two distinct inputs: (1) inspection findings resulting from NRC's inspection program; and (2) performance indicators (PIs) reported by the licensee. The

combined data provides a broad sample of information on licensee safety performance. However, it is not intended to cover every aspect of plant design and operation, but to provide an objective indication of the performance of plant systems and licensee programs in specific risk-significant areas. Both PIs and inspection findings are evaluated and given a color designation based on their safety significance. The NRC uses this input to compare the PI data to risk thresholds and to assess plant performance within the cornerstone areas. It is important to remember that reporting of PI data to the NRC is a voluntary program in which all licensees participate and is a key aspect to the success of the program.

As a whole, although improvements are something we are continuing to address, I believe that the revised oversight process has improved the efficiency and effectiveness of reactor regulation.

Fuel-Cycle Facilities

The NRC's fuel-cycle oversight process was also on a course similar to that being piloted for nuclear power reactors. However, staff recently informed the Commission that as a result of continued stakeholder interactions, progress made with respect to the implementation of the Part 70 ISA process, and lessons learned from the initial implementation of the reactor oversight process, that they are pursuing a path slightly different than what was originally proposed. Such an approach would consider: (1) revisions to existing fuel cycle inspection procedures; (2) revisions to the existing Licensee Performance Review process to make it more risk-informed and timely; and (3) deferral of finalizing the significance determination process and enforcement policy changes until after a time-tested implementation period of the Part 70 ISA process. The fundamental concept of focusing on areas and/or items with the greatest safety significance remains unchanged from that previously proposed. Instead of developing a new system for conducting inspections, as well as new inspection measures to evaluate against, the revised approach would consider utilizing the regulatory structure and framework that is currently in-place and available.

I do recognize that over the last two years the industry has not shared the same amount of interest and concern regarding changes to the fuel-cycle oversight process as it did for the reactor oversight process. From discussions I have had with the industry during this same time-frame concerning this topic, I am of the view that the approach currently being discussed by staff is more in line with what the industry had previously proposed. Recognizing that a possible change in approach is being considered, its final outcome remains to be determined.

Nuclear Security Following the Events of September 11, 2001

As I mentioned earlier, although the national and international importance of our programs and activities remains the same, the environment in which they will operate has significantly changed as a result of September 11th. For example, yesterday's low-profile -- low-recognition status of the physical security and materials control and accountability (MC&A) programs has now become today's very high-profile -- very high-recognition programs. On almost a daily basis, the NRC is being questioned on the adequacy of its regulatory infrastructure with respect to physical security and MC&A, with the recent Millstone situation adding to the skepticism. These items have attracted the interest of many of our Congressional constituents, some of whom are questioning our regulatory control and influence over licensees' possession, use, transportation, and disposal of licensed materials.

No one could have imagined or predicted the horror that emerged on September 11th, and in order to be able to move forward, we must remain focused, be deliberate, and not try to resolve issues before we can identify if issues even exist. Just because one has the authority to hold a hammer, does

not mean that everything should be considered a nail. In reflecting the words of Albert Einstein, “The significant problems we face cannot be solved at the same level of thinking that created them.”

You are well aware of the Commission’s decision to issue safeguards interim compensatory measures to our licensees by way of Order, with the issuance of such Orders already made to all nuclear power plants and the Honeywell UF₆ conversion facility. On this matter, I would like share with you my personal thoughts. It is my position that prior to the implementation of any additional interim measures, we should be mindful of what we are proposing because the NRC will have a difficult time stepping back from some of these measures. A majority of our licensees, mainly in the materials arena, are not even required to have a design basis threat (DBT) or a safeguards and security plan of equivalent DBT nature.

To address this concern, I believe that additional threat and/or vulnerability analyses should be conducted by these categories of licensees and further evaluated by NRC staff prior to imposing, by mandatory or voluntary nature, any additional requirements beyond those already considered in existing Safeguards and Threat Advisories. Because licensee response to previous Advisories has been quite adequate, I believe that we should proceed with up-front and open communications. I also believe that this approach will only enhance our credibility to move forward in a meaningful, deliberate, and systematic manner.

CLOSING REMARKS

Let me conclude by saying that it is clear that change on many levels is becoming prevalent in all that we do. Therefore, the NRC as a regulator, you as an industry, and all of us as individuals must be prepared for and willing to adapt to the changes that come before us. We must all be flexible enough so that we can effectively manage our working environments, while continuing to fulfill our mandate to protect public health and safety, and the environment. In remembering the words of Oliver Wendell Holmes, I offer you this to think about. “What lies behind us and what lies before us are tiny matters compared to what lies within us.” I hope that the insights and examples I’ve shared with you today provides a clearer picture of the steps that we have taken and the progressions that we have made, as well as the challenges that remain before us. Thank you.