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Focus on Safety and Security – How We Make A Difference

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This is my fourth Regulatory Information Conference (RIC). I've learned more about nuclear regulation with each of my three years at the NRC, and my knowledge especially benefits from each subsequent RIC.

I welcome all of you to the Conference and especially welcome our international guests, many of whom have traveled great distances to be here today. I also want to thank the Chairman for his leadership and Commissioner Jazcko for our many discussions. Through these interactions and many others, I have gained considerable insight into the complex challenges that face the NRC and a deep appreciation of the need for a strong and predictable regulator built upon the foundation of a competent and dedicated staff. In addition, I want particularly to recognize the efforts of the NRC staff who were involved in the planning and execution of this conference.

Last year in this forum I spoke to you on the theme that NRC needed to "ask the tough questions" and make "tough calls." My remarks then focused primarily on the challenges faced by the NRC. Today, I take a broader view and speak not only to what the NRC must do to make a positive difference, but to what the industry must do as well. I want to make this point not as an impersonal platitude, but rather to engage each of you on a personal level and to encourage your commitment to making a positive difference.

I believe that making a difference, whether one works in the board room or the guard towers, starts with the simple-but-powerful concept of commitment. Whether it is asking the tough questions, making the tough calls, anticipating and solving a problem before it becomes

significant, or continuously looking for opportunities to improve, we must not be satisfied with just being involved. Rather, we must each be personally committed to achieving these objectives. Commitment isn't easy. It takes daily determination. It takes a willingness to sacrifice. It takes a full application of every talent you possess. It takes effort to inspire others to make similar commitments. I ask each of you to renew your commitment to make a positive difference each day that you walk into your workplace, whether that is an NRC office building, or a facility site, or any other location from which you work.

Focus on Safety and Security

Materials Arena

Safety and security encompass both reactors and materials licensees. For materials issues, my thoughts turn to the medical uses of radioactive materials and sources, in which people are intentionally administered real doses and in which errors have the potential to result in doses to unintended sites or in excess of the treatment plan. In addition, industry frequently uses risk significant sources, and accidental exposures can have real consequences. Reactor licensees and the NRC pay a lot of attention to safety culture, but similar strategies and concepts of safety culture are far more difficult to apply to the wide diversity of radioactive materials licensees. Thankfully, very few doses in excess of regulatory limits or medical events have had any significant or detectable adverse physical impacts. But as long as such incidents occur, the possibility of significant consequences continues.

For example, an agreement state licensee reported that a radiographer and a trainee received unintended radiation exposures when they performed equipment maintenance and training inside a cell. They entered the cell to view the setup and examine the guide tube. However, they entered without a survey meter, unaware that the source was still exposed. As another example, a patient received a dose, far in excess of that prescribed, resulting from an incorrect and mislabeled dose of radioactive iodine from a radiopharmacy. In this case the error was also not caught by two nuclear medicine technologists who failed to correctly and accurately assay the dose prior to administration to the patient. This resulted in some loss of thyroid function. Materials licensees must renew their commitments daily to reduce the number of errors that cause inappropriate exposures. There is no question that, in this arena, errors can potentially cause risk-significant doses with real consequences, not just hypothetical accident probabilities.

I am watching with great interest the recent NRC initiative to improve its oversight of safety culture at licensed fuel facilities. These facilities have a regulatory framework that is significantly different from that of reactor licensees, and the approach to improving our oversight is being evaluated through a pilot effort. I am hoping that lessons we learn from that pilot might have relevance to our other materials licensees as well.

I have seen a very effective and continuously improving working relationship between the NRC and both the Agreement and non-Agreement States. I am especially pleased with the collaboration we have had with Agreement States in implementing the increased security controls of the Energy Policy Act of 2005, such as fingerprinting. All of the necessary actions to implement these controls have been taken in concert with those required of NRC licensees. Further, using this successful model, a joint Conference on Radiation Control Program

Directors/Organization of Agreement States working group for implementing the new fingerprinting requirements has developed an implementation plan, related guidance, and generic communications. I greatly appreciate the states' support for these national programs.

The nature of security issues involving materials also presents challenges to the NRC that differ from those with reactors. Last summer, the NRC was the subject of a widely publicized "sting" operation by the Government Accountability Office, which identified vulnerabilities in NRC licensing controls that could potentially allow the fraudulent accumulation of a sufficient quantity of low-risk material to a level that might be used to cause harm. The Commission immediately modified its licensing procedures, and we are taking another look at our materials programs to further identify and address any similar or related concerns. The NRC had appropriately focused after 9/11 on improving licensing and security requirements for materials with high-risk significance, but we should now accept the responsibility to improve operations with less risk-significant sources.

I remain personally committed to supporting the continuing efforts of the NRC staff who are making a positive difference in collaborations with our state colleagues and to the ongoing improvement of our materials regulatory programs. Further, I have supported, and will continue to support, full funding as allowed by law for Agreement State activities.

The recent National Academy of Sciences report, which raised security concerns with cesium chloride sources, especially blood irradiators, presents a challenge to the NRC. Improved source security, alternative forms of cesium, and x-ray replacements for cesium all need to be considered in light of this report, and the NRC must ensure that any action does not create unintended consequences. In my view, we must carefully consider stakeholders' issues as we contemplate any actions in this area, which could impact medical procedures.

Reactors Arena

Turning to the reactor area, the NRC is conducting its eighth annual self-assessment of the Reactor Oversight Process (ROP) in an ongoing cycle of improvement. The ROP has made a significant positive difference in the way the NRC conducts and publicly communicates our assessments of operating reactor performance to our stakeholders. It was a revolutionary change in regulatory oversight designed from "first principles," focusing on the most important attributes of the cornerstones of safety and security. It was created using an unprecedented staff outreach effort to engage public and industry stakeholders. It has significantly improved the public transparency, objectivity, and timeliness of NRC evaluations of licensee performance and guides a predictable, focused, and graduated NRC response to the specific issues. It is implemented by a dedicated inspection staff, including resident inspectors at the sites and staff from the regional and headquarters offices, who ask tough questions. From its very inception, the ROP has had a built-in self-assessment component, committed to continuous improvement. With the ROP, we have opened our inspection program to appropriate state participation and observation. In addition, we have invited a team of experts from the International Atomic Energy Agency and its member nations to review this program in 2010.

Notwithstanding all of this, NRC continues to receive requests from the public to implement additional inspections for some reactor facilities, often termed an "ISA" or independent safety assessment. The Commission has repeatedly addressed these requests by assuring our stakeholders that our ROP inspections are rigorous, independent, and constantly improving. To address these concerns, I encourage licensees to engage their local, State, and congressional representatives and invite them to your site – and I am aware that many of you are doing this. I'd like every governor, local and state official, and congressional delegation to understand the NRC's role in asking the tough questions and to know that the on-site presence of our resident inspectors makes a significant difference to the safety and security of operating reactors.

Another area in which, together, licensees and the NRC have jointly made a significant difference for our citizens is in emergency preparedness (EP). Our regulations and ROP oversight of EP implementation include regular drills and exercises from which both the NRC and our licensees continuously train, learn, and improve. Local communities that are prepared to take offsite protective actions for a highly unlikely set of reactor accident scenarios are also very well prepared for a much larger set of natural and man-made hazards. I have spoken previously of the effectiveness of the EP actions surrounding the Waterford plant following hurricane Katrina.

More recently in 2007, I observed an EP exercise at the Perry plant. A few days after the exercise, a train carrying hazardous material derailed within the EP zone, and the local emergency response activated many of the same functions that had just been exercised. Both the NRC and licensees must remain intensely committed to getting the most training and learning value out of every EP exercise. Maintaining an effective EP program around every site can make a very significant, positive difference to the local communities, as seen by these examples. In addition, the NRC is investing in significantly upgraded communications and data handling systems for our Operations Center, which I hope you have an opportunity to tour while you are here. As Admiral Jim Ellis of INPO has said, "Preparing for 100 contingencies prepares us for the 101st!"

The safety and security of operating reactors are among NRC's top priorities. In the safety arena, I seek industry's continued commitment to stay ahead of aging-related materials issues. I am encouraged that industry has a program to coordinate and prioritize initiatives in this area, but there is more work to do. Continued and unfaltering commitment is needed, and industry initiatives must continue to be aggressively informed by any and all relevant operating experience. By this I mean that the slightest indication of a possible problem, such as dissimilar weld integrity, corrosion effects on piping and tanks, or degradation of sheathing on underground cables, must be thoroughly assessed for generic implications and appropriate action taken. When the NRC asks the tough questions, industry needs to be ready with the answers. I believe that, with an appropriate industry commitment to a low threshold for identifying potential materials degradation issues and addressing them early, industry can achieve the goal of "no surprises" and "no material failures." If license renewal beyond the first renewal period is to be a possibility, then materials degradation issues must be better understood and mitigated.

In the operating reactors arena, the NRC must remain focused on issues that are most important to safety. Under our existing policies, we must continue to seek to be risk-informed, to clearly understand the bases and drivers of risk significance and the associated uncertainties, and to use this knowledge to appropriately focus our regulations, licensing, and oversight.

Turning now to the subject of new reactor licensing and construction, I reiterate what you have heard from many different commissioners in past years: Industry needs to put forward quality applications. You all know that quality is not something that is checked only at the end, it must be incorporated at every step of the process, from start to finish. The combined license and design certification acceptance review processes the staff implemented have proven to be beneficial in identifying technical sufficiency issues early. However, I am disappointed that the issues identified during the acceptance reviews are affecting our ability to issue standard schedules. We are committed to doing our job efficiently, but if the right information is not provided by the applicant, our review schedule will be impacted. With an applicant's commitment to meeting our quality expectations, I hope to hear of no more docketing acceptance letters that require further information in order to establish a review schedule. Our bottom line is that we will not cut corners in our reviews!

Safety Culture Arena

In the realm of safety culture at operating reactors, the NRC continues to accumulate experience with this latest element added to our ROP. I encourage continued interaction between the staff and stakeholders to ensure our assessment and oversight process develops useful and valid indicators of any decreasing trend in safety culture, prompting early interventions when appropriate. For me, safety culture has a lot to do with every employee being *encouraged* to (not just free to) express his or her views, particularly when that view is in the minority. It is also imperative that each employee feels safe, without fear of retribution, to raise concerns. Each employee also needs to have the confidence that his or her concerns will be evaluated. I believe the NRC must set the example in this regard, and I strongly support our current Open and Collaborative Working Environment initiative. I encourage you to visit our public web site to learn more about what we are doing.

The fundamental importance of safety culture was recognized by Admiral H. G. Rickover many years ago, before the term was ever coined. He said:

> One must create the ability in his staff to generate clear, forceful arguments for opposing viewpoints as well as for their own. Open discussions and disagreements must be encouraged, so that all sides of an issue will be fully explored.

As usual, the admiral succinctly and directly hit upon the heart of the matter. I also noted with great interest and support that within the past few years, the Office of Personnel Management (OPM) re-wrote the definition of the Senior Executive Service "Conflict Management" competency to include, "Encourages creative tension and differences of opinions." This shift in approach can make a significant positive difference and is aligned with how I believe the NRC should set the standard on safety culture. Getting all views out on the table is

one aspect of asking the "tough questions." Once all the views are on the table, a manager is far better equipped to make an informed decision. I believe that the Commission itself has greatly benefitted from staff recommendations that articulate all sides of an issue, including diverse and sometimes opposing views.

Safety culture also involves designing organizational processes that can ferret out small problems early, before they grow in significance. For problems that have happened before, both the NRC and industry should utilize robust operating experience programs and institutionalize lessons learned, and both the NRC and industry must remain committed to the effectiveness of these programs. To address future problems, we must maintain aggressively questioning attitudes and continue to ask, "What could go wrong?" With an appropriate industry commitment to safety culture, I would expect to hear of no more gas accumulations degrading safety systems, no more falsified records and logs, no more improper maintenance causing failed emergency diesel generators, and no more plants moving to Column 4 of the ROP Action Matrix. In this vein, I sincerely hope that the days of new sirens that don't work or cooling towers that collapse are behind us.

Security Arena

Turning now to the topic of security, I believe the NRC is playing its proper role as a partner in intelligence gathering, information sharing, and maintaining an intelligence assessment capability that provides timely new threat information to the Commission. The NRC is making a positive difference through its contribution to the integration of federal, state, and local governmental and law enforcement resources. The value of this broad integration of resources is evident to the Commission through our screening process whenever new threat information is evaluated. This past year, I supported improvements to this process that included earlier technical input from other agencies, removing cost analyses, and ensuring that the integrated threat mitigation capabilities of all Federal, state, and local agencies are taken into account.

All of the Department of Homeland Security (DHS) Comprehensive Reviews of the security capabilities at our sites have been completed and federal grant funds are available and being processed to close some gaps. DHS has begun similar reviews in other critical infrastructure areas, and those results may also be of value to both industry and NRC. I encourage continued coordination between NRC, DHS, and industry as these reviews proceed. I will be interested to see how well the civilian nuclear infrastructure ranks against these other elements of the nation's infrastructure, and I will be amazed if nuclear does not excel.

In 2007, we completed the first triennial cycle of realistic force-on-force tests, covering all of our nuclear plants and Category I fuel facilities. These tests made a significant, positive difference. They probed for and occasionally found weaknesses that were then corrected. Our nuclear plant security strategies are stronger today because of our force-on-force tests. In addition, last year, we modified our security allegation closure correspondence to provide additional details to allegers, when appropriate, regarding the handling of their allegations.

Regarding the beyond-design-basis aircraft threat, I supported the proposed rule in Part 52 for applicants for new design certifications to conduct an assessment of the impact of a commercial aircraft on their plant design. An assessment may identify design changes that could reduce the need for operator actions and enhance the robustness of the plant to aircraft impact without adversely affecting other safety features. On the matter of the acceptability criterion, however, I did not support the very general criterion in the proposed rule. Rather than describing how design and operational strategies avoid or mitigate the effects of aircraft impact only "to the extent practicable," I believe that the rule itself should provide an appropriately high-level acceptability criterion. For that reason, I look forward to input from the public comments in developing the final rule.

The incident at Peach Bottom undermined the credibility of security and the reputations of the regulator, industry, and our protective forces. In addition, the Peach Bottom incident, while the most publicized recent case, was one of 12 incidents of inattentive guards in 2007. That is not acceptable performance. Public perception of the events at Peach Bottom damaged the reputations of the other 64 sites. Repercussions from this incident will continue for months. Certainly the NRC must improve its process for handling allegations. But I believe industry, working with the guard forces, must reexamine any notion that security at our sites is performed by groups who are not fully integrated into site operations. Guards should be full members of the team of professionals required at each site. As industry develops approaches to avoid inattentiveness, or worse, collusion, it needs to ask why such incidents may occur. While the so-called "fireman's assistant" devices, which alarm when the wearer is inactive, may be one answer, I believe that we need to move away from zero tolerance for any inattentiveness and treat the root causes of inattention with the behavior observation and corrective action programs to understand and address causes. I believe that exclusive reliance on zero tolerance will defeat efforts to improve these processes.

My final point in the security arena involves safety culture versus security culture. I see commonalities and, conversely, unique aspects of each culture. Certainly, the willingness to come forward to identify problems or to offer an opposing view is common to both safety and security personnel. But security personnel operate within a different context of information accessibility and under standards of performance that differ significantly from other employees. These differences need to be factored into the notion of safety culture when we are discussing security. I believe that further dialogue between staff and our stakeholders will clarify whether one safety and security culture policy is appropriate or whether we need two separate policies. With a strong industry commitment to security culture, I would expect to hear of no more inattentive guards, no more collusion among guards to hide inattentiveness, and no more purposely damaged safety and security equipment.

Demonstrating Integrity

I turn now to another commitment that we, both NRC and industry, share. That is the commitment to act with integrity. The inward source of integrity is the genuine commitment to public health and safety and the protection of the environment. The outward face of integrity is

the manner in which we communicate with our stakeholders. Both NRC and industry need to continue seeking ways to improve the effectiveness of our communications because, in doing so, we will better demonstrate our integrity to stakeholders.

At the NRC, I am pleased with our innovations in communications, but we must not think of communications only in technological terms. We have many different stakeholders, and we need to continue looking for effective ways and venues to talk with people and answer their questions simply, accurately, and clearly. This can be a significant challenge in a highly technical field, but communicating effectively is an important key to making a positive difference. One of our biggest challenges in this regard is in accurately and effectively communicating to stakeholders how we employ the concept of risk. We must continue to find ways to convey risk concepts simply and clearly, both internally and externally. Being risk-informed and maintaining focus on what is most important to safety can make a substantial difference in our regulatory effectiveness and, therefore, make our continued commitment to improve in this area immensely important.

I am proud of the openness and transparency in our regulatory rulemaking processes, even in areas such as security rulemaking, in which we must balance the degree of openness with the need to protect sensitive information. In our rulemaking process, we actively seek public comment, and I value every comment we get. I recognize that we will never satisfy everyone all of the time, but our regulatory decisions must be informed by broad public engagement. Our integrity as a competent and independent regulator rests on our decisions being rational, objective, soundly based in science, and open to scrutiny to the extent possible.

I challenge every licensee to seek to make a difference by being similarly open to public dialogue and to communicate with integrity and understanding. Again, I quote Admiral Rickover on the pitfalls of not doing this. Nearly a half century ago, he wrote:

> When specialized knowledge of professional people is incomprehensible to the average man, he is apt to flounder between frustrated suspicion and excessive awe, leading him either to interfere unduly with professional independence or to accept naively every claim made by anyone who calls himself a professional.

Continuing to Enhance Technical Capabilities

The knowledge that the pioneers in this field bequeathed to us is not a gift that we place on our mantel to simply enjoy. Humanity has and will continue to push the boundaries of our scientific knowledge and understanding. In our area, both NRC and industry share the responsibility of continuing to enhance our technical knowledge and the capability to understand and adequately control and manage the potential hazards of nuclear technologies.

For the NRC, our growing knowledge base springs from a wide diversity of sources, including our own staff, the national laboratories, universities, and our many international partners. I believe this kind of diversity is important to remaining flexible and responsive to emerging needs. In particular, I want to once again acknowledge the importance of international research

collaboration and my support for the related initiatives that I believe are so important in a global nuclear economy. I continue to hold great hope for the Multinational Design Evaluation Program to achieve greater alignment and collaboration among our international regulatory colleagues.

In some cases, such as in advanced computer simulation codes and digital instrumentation and controls, the frontiers of knowledge are expanding, and NRC needs to make a concerted effort to catch up. In other cases, the NRC must lead the drive to push the boundaries of our capability, such as improving the state-of-the-art, realism, and usefulness of reactor risk and consequence analysis tools to better inform our regulatory decisions. In still other cases, the NRC must remain well informed of current and advancing research in areas such as radiation health effects studies and research by industry and the Department of Energy (DOE) in support of developing and licensing non-light-water advanced reactors like the Next Generation Nuclear Plant, which have the potential for inherent and passive safety.

Knowledge Management

The fourth and last main area I want to address today is one that has remained on my list of priorities since my first day at the NRC: human capital and knowledge management. For both the industry and the NRC, our success is founded upon the talents of many people dedicated to making a difference. A sufficient pool of such people must be cultivated in our school systems and university programs across our Nation and around the world. This is a shared challenge between government, industry, and academia. I am pleased when licensees are working with their local community colleges and sponsoring classes and programs in universities. You are making a real and long-lasting difference. I also look to the DOE to continue and increase its support of our national laboratory infrastructure and university research programs that attract and retain highly qualified scientific and technical personnel.

Every one of us here today and those in our respective organizations need to renew our commitment to encourage young people to pursue careers in science, engineering, and technology. As the philosopher Erasmus said about 500 years ago, “The best hope of a nation lies in the proper education of its youth.”

More recently, Alan Greenspan noted that, “If you can solve the education problem, you don’t have to do anything else. If you don’t solve it, nothing else is going to matter all that much.”

Why the concern today? You may already know how poor the science and math literacy statistics are in the United States relative to other countries. We live in a global, technological world, and every country needs citizens that understand the implications of science and technology. More to the point here today, our nuclear industry and the NRC need such citizens from which to draw qualified employees.

This fiscal year, Congress appropriated $15 million to NRC for use in fostering educational programs that broadly support the nuclear power industry. We must effectively use these resources to make a difference by growing the pool of talent needed in industry, government, and academia.

The NRC has experienced phenomenal growth over the past couple years. But with this growth in staff and the exodus of experienced retirees come a greater challenge to ensure that we institutionalize the experience and lessons learned from those who lived it and learned it first hand. Industry faces the knowledge transfer challenge to an even greater degree, particularly as new commercial entities, some of which are new to the rigorous quality demands of the nuclear field, come together to build a new generation of nuclear power plants.

My initial observation of new plant construction in other countries indicates that there are instances in which subcontractors are not following procedures, are not well supervised, and are not communicating effectively enough. I shouldn't need to remind some of the more experienced industry executives of the quality control failures that stopped construction at some U.S. plants over 20 years ago. I believe that if such problems occur here again during new construction, the delays could be considerable, and the nuclear renaissance may become the *second* nuclear hiatus.

The industry's challenge to retain and manage accumulating knowledge is not a future problem. It is here today. Some of our experienced NRC managers have noted a recent tendency for industry problems that surfaced 15 to 20 years ago to again be seen today. Knowledge Management, or KM, is ultimately a shared responsibility between both the regulator and the regulated industry.

For our part, the Commission has endorsed a KM Program within the NRC that includes written policies, best practices for sharing and recovering knowledge, and the information technology applications to facilitate these. We've hired a staff member to oversee KM efforts, begun pairing more experienced employees with their less seasoned counterparts in an expertise exchange program, initiated Communities of Practice to share information among specialized groups, and are holding technical symposia for staff. In addition, I strongly support both NRC's and industry's international collaborations to share and use operating experience data. As the global nuclear economy grows, international collaborations become increasingly important.

At the NRC, we must train our new employees, and then we need to provide the incentives to keep them. Being a highly rated workplace among federal agencies is an indication that we are doing many things right to foster a professional and inviting place for employees to find career satisfaction. Today and for many years before my arrival, the NRC has benefited from strong executive and management leadership. That leadership continues to focus on ensuring that NRC employees have adequate space in which to work, that we are addressing the needs of a new generation of employees, and that we hire to maintain a close match between our skill sets and the work we must do.

To all the employees and managers who make the NRC such a great place to work: you are the NRC's collective wisdom, its soul, and its heart. It is your commitment and dedication to the principles of public service for which I am immensely grateful. You are making a significant positive difference to our nation.

Closing

In closing my remarks today, I would like to reflect on my main theme of making a difference. We all owe a debt to the legacy of those who went before us and made a difference by holding us to high and unwavering standards and by demanding that we remain constantly committed to achieving them. Without this type of leadership in the past, we would not have achieved the benefits already reaped. Unless we learn from these past examples, apply that learning in our future, and transmit it to those who will succeed us, we will not achieve the benefits we seek.

In my remarks today, I quoted one such leader, who set the standard by which subsequent efforts have been measured: Admiral Hyman G. Rickover, the father of the nuclear navy and of commercial nuclear power. I recently read the fascinating account of how Rickover created his organization and the influence it had on the inception of nuclear power, by author Ted Rockwell in his book *The Rickover Effect: How One Man Made a Difference*. I'm sure that many of you have read this book. If you haven't, I'd strongly recommend it. Although I'm not sure that the admiral's personal leadership style would make many of today's leaders equally effective, I was struck by the timeless quality of the principles upon which he based his organization. These principles ranged from absolute adherence to high standards; to maintaining strong technical capability; to constant training; to respecting radiation; to facing facts and learning from experience; and to taking total responsibility for one's decisions and actions. My remarks today have a strong correlation with these principles. We must each commit to renew them, such that they remain alive in our thoughts and actions and form the core of our commitment and integrity that drives us to make a positive difference.

I also want to acknowledge the difference that another man made through years of dedicated service to our nation, a person who was my close friend and personal inspiration. Ed McGaffigan was regarded by the NRC's supporters and critics alike, from all political parties, as a strong, honest, and objective advocate of the NRC's policies to ensure adequate protection of the public health and safety and to improve agency operations. He continually challenged the industry, the NRC staff, and his fellow commissioners to strive ever harder to meet the highest of standards. His unwavering motivation to serve the public and the ideals of our nation inspired both old and new generations of NRC employees. He epitomized the Rickover principles I noted a moment ago. I will always be grateful to have known him and called him a friend. I'd like his life to be an example to us all, knowing that each of our actions makes a difference, to someone, somewhere, and we, therefore, need to make them positive.

Chairman Klein noted the creation of the Edward McGaffigan, Jr. Public Service Award. I strongly supported that action. The description of the award notes that Ed was, "relentless in his passion for making the NRC a better place to work, and a more efficient, responsive, and responsible agency."

The award also references Robert F. Kennedy's description of "moral courage," an attribute that Ed certainly personified:

> Moral courage is a rarer commodity than bravery in battle or great intelligence. Yet it is the one essential, vital quality of those who seek to change a world which yields most painfully to change.

As Ed would, if he were here today, I challenge us to commit to acting with total responsibility and integrity. Together, as an industry and as a strong and independent regulator, we can make a positive difference for the citizens of our nation and of the world.

Thank you for your kind attention, I hope you have a very productive conference, and I look forward to further interactions with many of you here.