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International Cooperation for the Development of Consistent and Stable Transportation Regulations to Promote and Enhance Safety and Security

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Abstract

International commerce of radioactive materials crosses national boundaries, linking separate regulatory institutions with a common purpose and making it necessary for these institutions to work together in order to achieve common safety goals in a manner that does not place an undue burden on industry and commerce. Widespread and increasing use of radioactive materials across the world has led to increases in the transport of radioactive materials. The demand for consistency in the oversight of international transport has also increased to prevent unnecessary delays and costs associated with incongruent or redundant regulatory requirements by the various countries through which radioactive material is transported. The International Atomic Energy Agency (IAEA) is the authority for international regulation of transportation of radioactive materials responsible for promulgation of regulations and guidance for the establishment of acceptable methods of transportation for the international community. As such, the IAEA is seen as the focal point for consensus building between its Member States to develop consistency in transportation regulations and reviews and to ensure the safe and secure transport of radioactive material. International cooperation is also needed to ensure stability in our regulatory processes. Changes to transportation regulations should be based on an anticipated safety benefit supported by risk information and insights gained from continuing experience, evaluation, and research studies. If we keep safety as the principle basis for regulatory changes, regulatory stability will be enhanced. Finally, as we endeavour to maintain consistency and stability in our international regulations, we must be mindful of the new security challenges that lay before the international community as a result of a changing terrorist environment. Terrorism is a problem of global concern that also requires international cooperation and support, as we look for ways to ensure the safe and secure transport of radioactive materials in international commerce.

Introduction

Good morning. It is a pleasure for me to be with you today at this conference which provides us the opportunity to learn from each other and share our collective knowledge and experience regarding the transportation of radioactive materials. Thank you, to the hosts of the conference for organizing this event and for inviting me to speak to you today. Please permit me to add, as a personal note, that I have recently assumed the responsibilities of Director of the United States Nuclear Regulatory Commission's Office of Nuclear Material Safety and Safeguards. My office includes the Spent Fuel Project Office which has a wide range of responsibilities including radiological protection in transportation. I am looking forward to meeting with you, the recognized leaders and experts in this field, in the days ahead.

I am particularly pleased to be a part of this event because it embodies the spirit of international cooperation for a component of the nuclear industry that inherently requires such cooperation to ensure the safe and secure transport of radioactive material between our countries and around the world. International commerce of radioactive materials crosses national boundaries, linking separate regulatory institutions with a common purpose and making it necessary for these institutions to work together in order to achieve common safety goals in a manner that does not place an undue burden on industry and commerce. Widespread and increasing use of radioactive materials across the world has led to increases in the transport of radioactive materials. The demand for consistency in the oversight of international transportation has also increased to prevent unnecessary delays and costs associated with incongruent or redundant regulatory requirements by the various countries through which radioactive material is transported. A major focus of my talk today, and of NRC's presentations this week, is to discuss the need for consistency in transportation regulations and standardized approaches to prevent unintended negative impacts to the nuclear industry and unnecessary delays and burdens on international commerce

A second theme of my speech today is regarding regulatory stability. As a guiding principle, if we keep safety as the principle basis for changes to international transportation safety regulations, regulatory stability will be enhanced. Risk information and insights gained from continuing experience, evaluation, and research studies should be used to support transportation regulation changes based primarily on anticipated safety benefits.

Finally, as we endeavour to maintain consistency and stability in our international regulations we must be mindful of the new security challenges that lay before the international community as a result of a changing terrorist environment. Terrorism is a problem of global concern that also requires international cooperation and support, as we look for ways to ensure the safe and secure transport of radioactive materials in international commerce. The United States is actively evaluating potential vulnerabilities in our facilities and operations, including transportation, to ensure that we are prepared for and enhance our security programs to address these new challenges. We must determine what security measures are needed for what types of shipments. We must also consider how these measures, if implemented, could impact safety.

I thought it important to note that, as I prepared my presentation for you today, I was mindful of NRC's strategic plan that was published in July of this year. This plan describes our mission, vision, goals, and outcomes that will guide NRC's strategic direction over the next 5 years. The strategic plan is centered around 5 goals, which are the focus of the NRC presentations this week. These goals are the following:

- Safety: to ensure protection of public health and safety and the environment
- Security: to ensure the secure use and management of radioactive materials
- Openness: to ensure openness in our regulatory process, and
- Effectiveness: to ensure that NRC actions are effective, efficient, realistic, and timely
- Management: to ensure excellence in agency management to carry out the NRC's strategic objective

The published strategic plan goes into detail on how NRC's transportation activities feature prominently in strategies for accomplishing these goals. One major purpose of publishing the strategic plan is to help align NRC regulatory activities around our mission-- at the executive, management, and staff level. It also communicates NRC's objectives to our domestic and international partners. In your dealings with NRC you will increasingly see us using this plan in our daily activities. If interested, you can view our plan on our website, www.nrc.gov.

Let me turn now to more specifically discuss my three themes for today-- international cooperation and consistency; regulatory stability; and integration of security with safety objectives in our regulatory processes.

International Cooperation and Consistency

The need for international cooperation in transportation is clearly evident, as international commerce in radioactive materials places hazardous material in a different public domain with each transboundary movement. Transportation accidents anywhere in the world, even those with little or no radiological impact, can have significant ramifications on public confidence worldwide. The public has come to expect an exemplary safety record for transportation. Clear and open communication among regulatory authorities, affected industry, and the public is crucial to maintaining this exemplary record. NRC is firmly committed to continuing our role in international cooperative exchanges at all levels. NRC staff members participate in many international conferences and on many international working groups. The International Atomic Energy Agency (IAEA) has a lead role in international cooperation in the transportation of radioactive materials. Charged with promulgation of regulations and guidance documents for international transport of radioactive materials, Member States must practice consensus building for the establishment of safe and acceptable methods of transportation. The invaluable opportunity for international collaboration through organizations such as the IAEA and conferences such as PATRAM assures us that we are able to appropriately address and benefit from the experience and knowledge gained by our regulatory counterparts in other Member States that may have similar experiences.

Particular to the transportation industry, there is a need for international cooperation with respect to unilateral certifications that all Member States can accept with confidence. Current unilateral package design approvals do not always achieve this aim, which is the acceptance of one Member State's package design approval by all other Member States. All Member State reviews of package designs are based fundamentally on the same international transportation standards found in IAEA's TS-R-1. However, the process and techniques used in the application of these standards in the design review may vary among Member States to a degree that some Member States decide to conduct their own, independent reviews of these package designs. The concept of developing an internationally accepted standard reviewers guide has been discussed and even initiated in some cases, to prevent unnecessary additional, reviews on the part of competent authorities. The IAEA and Member States must be an integral part of this standardization process. Consistency in the reviews of transport packages is needed to prevent significant expense and delays on the part of shippers who in addition to receiving competent authority authorizations must re-

certify packages for every State through which packages enter. These additional reviews would not be necessary if a mutually agreeable review by qualified reviewers was conducted and accepted by all Member States.

Regulatory Stability

Another important facet of international commerce is the need for stability in transportation standards. Unnecessary complexity and changes to these standards may have negative safety consequences due to incorrect interpretations and difficulty in keeping abreast of changes. These changes may also have unintended impacts and burdens on the industry. As a guiding principle, I submit that changes to existing standards should be made only if they are deemed necessary and have a significant impact on safety or efficiency. Risk considerations should be used as a guiding principle in our assessment of whether changes are needed to transportation standards and regulations. We recognize and support individual Member States right to decide if and how to adopt international standards, to accommodate the specific states' economic, social, and national systems. However, transportation requires greater consistency across Member States and care must be taken to avoid changes or differences in application of standards that can create costly and unnecessary burdens. Even seemingly minor changes, such as format or units on labels, can have significant costs to governments in adopting the IAEA standards and to industry in applying them.

The IAEA has a lead and integral role in the development of new transportation standards. Specifically, the Transport Safety Standards Committee (TRANSSC) of the IAEA is responsible for the development of international safety standards and reviews proposed changes to existing regulations. Recently, the review cycle for the IAEA's transportation standards was changed from ten years to two years, consistent with the review cycle for other hazardous materials. Although more frequent reviews have been initiated, if current standards appear to be adequate and no immediate changes to standards appear to be necessary, IAEA transportation standard revisions can and should occur less frequently than the review cycle. However, if urgent changes are needed and can be justified from a safety perspective, the two-year review cycle will enable the IAEA to make more timely changes that are important to safety and security. Thus, the two-year review cycle, and I want to emphasize this is a two-year review and not a revision cycle, will provide for timely action where necessary, and we must be judicious in identifying changes that are really needed and avoiding changes that could create unnecessary instability. I should also note that the US supports IAEA's inclusion of timeframes for Member State comment on change proposals that are long enough to allow individual Member States the opportunity to seek input from domestic stakeholders, if they choose to. For the US, this aspect of the review cycle directly supports NRC's openness strategic goal.

Risk information and insights gained from continued operating experience, evaluation, and research has provided us with a method to evaluate the appropriateness of our standards and has supported regulatory changes based on safety. We use risk insights to supplement or inform the modification of our requirements. The process of risk-informing regulations is not a means to diminish necessary regulatory oversight; rather, with the appropriate safety basis, it is a way to allow the more effective regulation and use of resources. Although the risk-informed regulation concept has in recent years been focused more in the reactor arena, it is gaining momentum in NRC's waste and material arenas, including transportation, enabling us to consider risk information with respect to various safety considerations and to identify areas where improvements can be most beneficial and effective.

We think that risk information should play an important role in the process of revising transportation safety standards. We have advocated the use of risk information by IAEA member states early in the process when proposing possible revisions to IAEA's transportation standards. Many of you have been involved in the effort to review and revise IAEA's transportation safety standards. We support the practice of including risk assessment information to justify proposed changes to standards by a proposal's sponsor. We think that incorporating risk information helps to identify those revisions that can measurably improve safety. It is important to note that risk information can also be used to support existing requirements, as well as provide a basis for revisions.

We have in existence today a very mature radioactive transport industry, with an unquestionably excellent safety record. In proposing the risk informed regulatory effort, in no way do we want to replace this proven system and start over. Rather, in facing the new challenges before us, we want to recognize our successes, build upon our safety record, improve effectiveness, and seek efficiencies. We want to maintain a consistent and stable set of regulations, and allow changes that will have a measurable beneficial impact to safety.

Security

I would now like to briefly talk about security issues. The US regulatory basis for transportation has always considered the threat of sabotage and acts of terrorism for spent nuclear fuel as part of defense-in-depth. This along with the robust nature of shipping package designs and monitoring and control of shipments have provided a high-level of security. However, the events of 9/11 highlighted the importance of physical security and emergency preparedness and response, and required that we further assess our security requirements. NRC working with other US Federal, State, and local government agencies has expedited efforts to evaluate and address potential vulnerabilities in our regulatory activities, including transportation. Specific to transportation, after September 11, 2001, NRC undertook an effort to evaluate the response of storage casks and transportation packages to various acts of sabotage. Advisories, orders, and other interim measures have been utilized in the US over the past few years to address security concerns. The NRC will continue to interact with industry and our counterparts on implementing potential mitigative measures that the Commission determines are necessary. NRC staff is also working with the international community to address security issues of concern with respect to the shipment of radioactive materials across and within national boundaries.

I want to specifically point out the IAEA Code of Conduct for the Safety and Security of Radioactive Sources and associated guidance document, which recommends additional controls for the import and export of radioactive material. The US has committed to implement the provision of the Code as identified in the guidance document. The requirements include cradle to grave controls on certain radionuclides based on risk significance. The NRC is currently developing a proposed rulemaking which should be available to the public for review and comment later this year, to address security issues associated with imports and exports. The NRC is working with other US federal and state agencies, and key international stakeholders to make sure that the framework that is established for these controls minimizes undue impacts to international commerce, while improving overall transport security controls. In a related area, transshipments, or shipments of material from one country to another country which transit an intermediate country, are also an area of focus for the US. Existing security requirements may need to be enhanced to address these type of shipments. The NRC is working with other US government agencies to identify and implement appropriate security requirements for transshipments. The NRC is also working with other US federal and state government agencies to develop a national database to establish an improved inventory system and control of high risk sources. Other efforts related to high risk source control, include requirements related to tracking, access controls, and improved notification and response capabilities.

It is important to recognize that safety and security requirements are not mutually exclusive and must be considered collectively. For example, some security measures attempt to minimize access to shipping information or labelling of radioactive material in an attempt to prevent widespread knowledge of radioactive shipments. However, labelling and placarding of radioactive material is instrumental in warning workers, emergency response personnel, and the public of the hazards involved with the shipment. Thus, as the NRC and the international community attempt to impose additional requirements to ensure security, we must integrate our safety and security assessments and be mindful of the consequences of these actions to both safety and security, as well as the overall impact to commerce.

Closing

In closing, I would like to remind you of the goal we share as an international community to ensure the safe and secure transport of radioactive material around the world. I think that we can all agree that international cooperation has been key to an excellent transportation safety record in all of our countries and that it is this cooperation that will help ensure that we continue to maintain an excellent record in the future. As I have outlined in my presentation today, I think that consistency and stability in our regulatory processes will have a beneficial impact to overall safety, as well as international commerce around the world. We also recognize, however, that there are new security challenges that we must address as a result of a changing security environment and increased globalization. Thus, a challenge that lies before the US Nuclear Regulatory Commission and a challenge that I lay before you all today is how can we as an international community best continue to address the safety and security issues of the 21st century while maintaining consistency and stability in our standards and regulations to both enhance and promote the safe and secure transport of radioactive materials around the world? Thank you all for your participation in this conference and for your attention this morning. I look forward to meeting you in the days ahead.