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Remarks of Commissioner Kristine L. Svinicki
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The US Experience: Development of a comprehensive national legal framework covering all aspects of nuclear law

Good afternoon. I am honored to be taking part in this conference and appreciate the opportunity to address you today. The challenge of meeting rising energy demand, while balancing multiple considerations such as cost, safety, security, and environmental protection, is an urgent topic that has moved increasingly to the front of the agenda for many countries of the world, including the United States.

My presentation is intended to provide you with information on the legal framework for using nuclear energy from the perspective of a government agency charged with overseeing the safe use of nuclear materials. I hope this information will be useful to you in considering these important topics.

As a regulator, I have an obligation to understand the legal structure within which my agency – the United States Nuclear Regulatory Commission or "NRC" – exercises its authority, accompanied by an appreciation for the underlying legal basis. In light of my experience thus far at the NRC, I believe it is important for the leadership of any country to understand that a sound legal framework based on well-understood principles is an essential precursor for every nuclear energy program. The long-term success of any nuclear power program – and arguably nuclear power worldwide -- may depend in large part on the effectiveness of its regulatory program.

Since the topic that I've been asked to speak to you about is the U.S. experience in implementation of a national legal framework, my presentation will provide examples of how principles of nuclear law have been applied in the United States. In doing so, I hope to provide a basic understanding of how nuclear power is regulated in the United States.

However, I recognize that each country has its own unique legal structure, making it difficult or

even inadvisable simply to adopt the approach of any other country. Therefore, what I want most to convey in my presentation is the basic set of principles that underlie the legal and regulatory framework in the United States. Many of these principles are well-established in the international community, and endorsed by the International Atomic Energy Agency.

Before I begin discussing those principles, however, I would like to give you a little background on the agency I represent. The U.S. Nuclear Regulatory Commission was established in 1975, when the first governmental body which had been established to oversee the use of nuclear materials in the U.S. – the Atomic Energy Commission – was divided into two organizations.

This reorganization was undertaken by the U.S. Congress to establish a clear division of responsibilities between those parts of the government that worked on programs to develop and promote the civilian use of nuclear energy and those responsible for establishing the standards, licensing the operators, and enforcing the regulatory requirements for users of nuclear materials.

The NRC is headed by five Commissioners, one of whom is designated by the President as Chairman. Each Commissioner is appointed by the President with the advice and consent of the Senate to a five year term. Currently, only three of the Commission seats are filled, but new potential Commissioners were confirmed by the United States Senate on Friday and will be sworn in and join the Commission very soon. All of the remaining nearly 4,000 NRC employees are career professionals serving in five principal locations throughout the United States, with resident inspectors assigned at each reactor site.

The NRC's legal authority is derived primarily from its enabling legislation, the Atomic Energy Act of 1954. The Atomic Energy Act has been described as "virtually unique" in American statutory law, in that it provides an extremely broad degree of discretion to the NRC's technical judgment.

Arguably, the most important aspect of the Atomic Energy Act is the directive that the NRC establish requirements for the use of nuclear and radioactive materials that provide reasonable assurance of adequate protection of the public health and safety and common defense and security of the United States. The specific measures that the NRC chooses to use to meet this obligation are, by law, left almost entirely to the agency's discretion.

Under the Atomic Energy Act, the NRC has responsibility for regulating all civilian nuclear activities. Generally speaking, the NRC imposes its regulatory program on licensees through generically applicable regulations, through site-specific orders, and through site-specific licenses.

Under our Federal system, licensing and inspection of certain medical and industrial uses are relegated to those State governments that choose to undertake this role. While about 5,000 industrial and medical users are licensed by the NRC, approximately 20,000 users are licensed by 37 states of the United States. Additionally, for a few, very specific activities, the NRC has a regulatory role over other Federal agencies, such as the U.S. Department of Energy, most notably, to license a high-level waste repository.

To illuminate the scope of the nuclear energy program that the NRC oversees, 104 operating reactors provide roughly 20 percent of the U.S. net generating capacity. A number of other countries with nuclear power plants rely on nuclear energy for a larger percentage of their overall generating capacity, but the U.S. has about 30% of the world's installed nuclear capacity at this time.

As I have noted, however, before a nation embarks on any nuclear power program, it should first critically assess its legal framework. Since the nuclear program cannot function in a vacuum, account should be taken of the full scope of laws, regulations, and government organizations that will apply to – or have some compelling authority over – the operation of a nuclear power plant.

Some of the questions that should be asked at the outset include:

* Are the institutional responsibilities for regulating nuclear-related activities clear and consistent?
* Do the State's existing or planned legislative measures provide the regulator enough authority to do its job and do they make safety and security the priorities?
* What are the possible gaps and overlaps in the legal regime that might impair efficient regulation through unnecessary delays and bureaucratic conflicts? and
* To what extent does the State's legal framework address or implement international obligations and guidance?

A critical assessment of the legal framework in the United States would reveal, for instance, that in addition to the Atomic Energy Act, there are numerous other Federal statutes that govern the operation of a nuclear power plant and the conduct of the NRC. These include laws covering environmental protection, laws requiring public participation in licensing and other regulatory activities, and laws governing the reliability of the bulk power system. And all of these laws fall under the overarching framework provided by the U.S. Constitution.

Furthermore, though the NRC is exclusively responsible for the safe and secure use of nuclear materials, many other Federal agencies exercise legal authority over other aspects of nuclear power plants.

For example, other agencies regulate the non-radiological safety of nuclear workers; criminal activities are investigated by our Justice Department; the transportation of hazardous materials is the responsibility of the Department of Transportation; and emergencies at nuclear power plants are responded to by several Federal and state agencies.

All of these authorities are founded in national laws. But to ensure that nuclear power plants are regulated in a manner that allows the operator of the facility to stay focused on safe operations at all times, the NRC works closely with its Federal and state partners, and has numerous agreements that outline the respective roles and responsibilities of these various governmental bodies.

These agreements often take years of careful development. Anticipating the need for these interactions throughout the government at the outset in development of the legal framework can certainly lead to a much more efficient use of government and industry resources by easing inter-governmental coordination and minimizing bureaucratic overlap.

As I have stated, there are a number of basic principles that form the foundation for all effective regulatory programs worldwide. Reflecting this, the International Atomic Energy Agency has developed a concise set of eleven principles of nuclear law that provide a useful categorization of the elements of an effective legal framework for the use of nuclear energy.

The first of these principles – and the one that is paramount – is the safety principle. The legal framework must be based on an understanding of – and clearly acknowledge – the balance of risks and benefits to be achieved with the use of nuclear technology.

When the risks associated with an activity are assessed, the law must give priority to protecting public health and safety. In the event that balance cannot be achieved, the safety principle of nuclear law requires action favoring protection of public health and safety.

The law should also reflect the hierarchy of risk in all activities, and the legal restrictions imposed on each activity should be equal to the individual degree of risk involved. The State should consider both the risks and benefits of each particular use of nuclear energy and radioactive materials, so that the appropriate balance is achieved between the two.

As I mentioned before, the Atomic Energy Act imposes a safety standard of reasonable assurance of adequate protection of public health and safety. Consistent with the risk hierarchy formula I just described, however, "reasonable assurance of adequate protection" does not mean "no risk."

The standard under the Act acknowledges that the use of nuclear technology will always involve some degree of risk, and that the regulator must consider the degree of risk associated with each activity – with particularity – and recognize that its regulatory standards cannot be designed to eliminate risk entirely from those activities. At the NRC, we view our task as one of establishing a regulatory framework and oversight process that provides sufficient requirements to ensure that the public is adequately protected, yet also does not hinder the development and use of new nuclear technologies.

The second principle of nuclear law is the security principle. This principle acknowledges that nuclear material and technologies, if diverted to non-peaceful uses, can pose serious risks to persons and social institutions. Such risks include the use of radioactive material by terrorist or criminal groups to create radiation dispersion devices to be used in malevolent acts, the diversion of nuclear material for the creation of nuclear weapons, or the radiological sabotage of nuclear reactors. Thus, the State must ensure that legal measures are imposed on users to protect and account for the types and quantities of nuclear materials that pose security risks.

As with safety considerations, the law must take into account the security risks associated with the activity. This is no easy task with security, where unlike safety, risk assessment does not generally involve a known set of verifiable scientific and engineering parameters. Consequently, it is often a challenge to strike the necessary regulatory balance.

Security cannot be considered outside the context of safety, however. Attention must be paid to effective integration of the safety and security interface by assessing the impact that a safety decision may have on the continuing ability of the licensee to meet security requirements.

In the U.S., for example, regulations were finalized in 2009 requiring reactor licensees to develop and maintain processes to consider the interface between safety and security before operators make decisions that may have an adverse decision on one or the other.

Although, in my view, it is most effective to concentrate responsibility over the safety and security of nuclear facilities into one government agency, as is done at the NRC, it is also possible that responsibility may be assigned to different agencies of government as long as it is understood, and reflected in the law, that safety and security take priority over all other considerations.

This leads me into the next principle of nuclear law: the independence principle. Experience has shown

that safety goals, as well as the credibility of the regulatory body itself, are best served by a complete separation of the regulatory body from the promotional and implementing organizations and political influence, to the extent possible.

Therefore, one of the key challenges for a country considering nuclear power for the first time is the form and function of the nuclear regulatory body, and its legal relationship to other branches and agencies of the government.

The Convention on Nuclear Safety states that the safety regulator should have the authority, competence, and resources adequate to fulfill its responsibility, and that there should be sufficient independence of the regulatory body from those organizations concerned with the promotion of nuclear energy.

As I mentioned earlier, the United States incorporated the independence principle when it separated the promotional and the regulatory functions into separate agencies in 1975. Since its creation, the NRC has maintained its independence through two legislative mechanisms.

First, Commissioners at the NRC can only be removed "for cause." That is to say, by law, a Commissioner can only be removed from his or her position for inefficiency, neglect of duty, or malfeasance in office. This is intended to insulate the decision-making of Commissioners so that they can decide policy matters focused solely on safety and security considerations.

The NRC's independence is also preserved through the provisions of the Atomic Energy Act itself. As stated previously, the Atomic Energy Act provides an extraordinary degree of deference to the NRC's technical and expert judgment. For example, the President and Congress have no direct involvement in NRC licensing decisions, with the exception – of course – of their power of appointment and confirmation of the Commissioners themselves.

Recognizing that the regulator should be rigorous in making an independent and objective evaluation, it is important to note that independence does not mean — and should not imply -- that the regulator works in isolation. Because the NRC considers nuclear regulation to be the people's business, we are committed to transacting this business in as open and transparent a manner as possible.

Although many of the NRC's interactions with the public are prescribed in law – such as public hearings associated with the issuance of licenses, public comment opportunities during the development of generic regulatory requirements, and public scoping and comment on the assessment of environmental impacts – the NRC recognizes that all of our operations and procedures must be carried out in a manner that promotes public confidence in our decisions. The NRC therefore exceeds the minimal legal requirements for public participation in our regulatory processes.

For example, the NRC makes as much of its written information as possible available electronically, on our public website and broadcasts – or "webcasts" – many of its meetings over the Internet for remote viewing by interested members of the public who cannot attend NRC meetings in person. The NRC also holds meetings with stakeholders at locations across the country on various topics, and specifically holds public meetings in communities situated near nuclear power plants to discuss the results of the NRC's inspection and oversight program for those plants.

Effective communication of all relevant information about the uses of nuclear technology can greatly contribute to public understanding of the technology and its relative risks, as well as confidence in the

performance of government safety authorities.

Despite the utility of transparency, it is, of course, important to strike an appropriate balance between a regulatory process that is open to the public, yet still ensures, in recognition of security concerns, the protection from disclosure of sensitive information. The U.S., for instance, has a number of laws and regulations dealing with the protection of classified and sensitive unclassified information. The NRC's public communications must, of course, take these legal constraints into account.

Turning to another of the principles of nuclear law, it is understood that in most national legal systems, activities that are not specifically prohibited by law are considered to be free for persons to undertake without official authorization. Therefore, under the principle of nuclear law referred to as the "permission principle," the law must be clear about when prior permission must be obtained.

Given the special risk associated with nuclear technology, it is particularly important to be clear about when prior permission must be obtained before undertaking activities involving radioactive material or activities that could affect the safe operation of the installation. In this context, "permission" may be understood to be conveyed through a license, permit, certificate, or other approval issued by the regulator or by operation of law.

Closely associated with the permission principle is the continuous control principle. The State and its designated regulator must retain a continuing ability to monitor activities once they are authorized to ensure that they are conducted safely. National nuclear legislation should make clear that the regulatory authority has ongoing access to all locations where nuclear activities take place, without the need to get the permission of the operator prior to entry.

In the U.S., the Atomic Energy Act provides authority for the NRC to require record keeping and permits inspections of activities and records "as may be necessary to effectuate the purposes" of the Act. Free and continuous access is also reflected in NRC regulations for power reactors covering inspections, maintenance of records, and demand for information. Also, all submissions to the NRC are required – under penalty of law – to be complete and accurate in all material respects.

The compliance and international cooperation principles reflect the need for the State's nuclear law to recognize the potential cross-boundary safety and environmental implications of a nuclear energy program. The use of nuclear material also involves security risks that can cross borders. Threats of terrorist acts and the threats of proliferation of nuclear explosives have long been the source of high-level international cooperation.

A significant collection of bilateral and multilateral instruments – such as the Convention on Nuclear Safety, the Nuclear Non-Proliferation Treaty, the Code of Conduct on the Safety and Security of Radioactive Sources, and the Convention on Early Notification of a Nuclear Accident – must be considered when developing the national legal framework. Not only must governments comply in good faith with these obligations, but the terms of these agreements must be taken into account as a national law is drafted to account for these international obligations.

Depending on the legal structure of each State, compliance with these international obligations may occur automatically, or may require additional legislative action, such as ratification of a treaty. Each State must assess its own national legal structure to ensure that addressing these international instruments is consistent with its own laws.

The compensation principle is certainly an aspect that is unique to nuclear law, and generates a great deal of interest worldwide. Since preventive measures cannot necessarily preclude the risk of damage to persons, property, and the environment as a result of the use of nuclear materials, each State should adopt measures to provide adequate compensation in the event of a nuclear accident.

With respect to the possibility of trans-boundary nuclear damage, international nuclear liability conventions have been adopted to facilitate the bringing of actions and the enforcement of judgments without hindrance by national legal systems.

Adoption of a national liability regime consistent with these international provisions protects the public and has come to be expected by international nuclear suppliers. In the United States, nuclear liability is addressed through a law known as the Price Anderson Act, which was adopted in 1957.

The final principle of nuclear law I will mention is the sustainable development principle. This principle is intended to address environmental considerations that should be accounted for in the national law. This principle is particularly applicable in the nuclear field as some nuclear and radioactive materials can pose health, safety, and environmental risk for extended periods of time. Because many of these materials are very long-lived, it can be difficult to determine what current measures are necessary to protect generations in the distant future.

In light of this uncertainty, an approach that some States have taken to the sustainable development principle is to impose measures to protect long-term safety to the extent practicable, but which will not foreclose future options as technologies evolve.

In the United States, we see our safety and security requirements for the use of nuclear materials as our primary measure for protecting the environment over both the immediate and long-term. However, the NRC also expends a significant amount of resources analyzing the potential environmental impacts – over the very long-term – of all of the activities that it is responsible for approving.

I have focused my remarks today on the legal framework of the establishment of a governmental nuclear safety authority. While the establishment of an effective, independent regulatory body, with clear authority and adequate human and financial resources is a necessary component of the nuclear regulatory framework, I would like to close by emphasizing that the operator or licensee who has been granted authority to conduct nuclear activities is primarily responsible for ensuring safety.

The operator's authorities and responsibilities should be clearly established. These include such actions as ensuring the quality of the materials and construction that go into the facility, maintaining adequate technical and financial resources to conduct operations safely, and reporting all required information to the regulatory body. In the United States, such obligations are imposed via regulatory requirements on licensees and through conditions stipulated when granting a license.

Undertaking a nuclear power program requires the commitment of government, potential operators, and citizenry to develop a legal and societal framework that will demand and facilitate safety and security in the operation of the nuclear enterprise. In the United States, this has been an effort spanning many decades and we continue to examine and improve our framework, where possible. I thank you again for the opportunity to share these experiences with you and hope this information will be helpful to your safety programs.

Thank you.