

NUCLEAR ISSUES

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Summary

The current debate over climate change and increasing pressure to marginalize fossil fuel, coupled with a general hesitation to privilege and invest in research on alternative sources of energy, could lead towards increased recourse to nuclear power for energy production. New forms of terrorism, combined with poor conditions of security at nuclear storage facilities in many former Soviet Republics and the continuing instances of smuggling and illicit trafficking of nuclear materials have placed nuclear negotiations once again high on the international agenda.

The international legal framework for nuclear energy, in its current form, was developed mainly as a reaction to the accident in the Ukrainian nuclear power plant of Chernobyl, in the former USSR in April 1986, and is, therefore, relatively recent. Acknowledgment of the environmental impact of nuclear energy applications is also relatively new and its regulation is generally incidental to, or, at the very best, a specific component of a broader regime, rather than its exclusive focus. While the entire edifice of international environmental law is based on the concepts of transparency and accountability, nuclear regulation remains one of the last sectors in which information to the public is still relatively restricted.

In regulating nuclear activities, three main themes emerge: prevention or accidents, communication and management of their effects, and liability (redress) for damages caused to human life or property. Currently, a number of international agreements are in force regulating all three of these aspects. The Convention on Physical Protection of Nuclear Material, the Convention on Nuclear Safety, and the Joint Convention on the Safety of Spent Fuel Management and the Safety of Radioactive Wastes cover the aspects of prevention. Two 1986 Vienna Conventions on Early Notification, Cooperation, and Assistance in Cases of Radiological Emergencies deal with response to and management of nuclear accidents or radiological emergencies, while civil liability conventions for nuclear damage provide necessary redress mechanisms. Communication is a core element of all conventions, as it guarantees that information will be exchanged and decisions will be made on the basis of all available data.

1. Introduction

The international legal framework for nuclear energy, in its current form, was developed mainly as a reaction to the accident in the Ukrainian nuclear power plant of Chernobyl, in the former USSR in April 1986, and so it is relatively recent. Acknowledgment of the environmental impact of nuclear energy applications is also relatively new and its regulation is generally incidental to or, at the very best, a specific component of a broader regime, rather than its exclusive focus. Such approach comes in sharp contrast with the clear-cut environmental regulation of other activities or substances, such as oil or fishing.

International regulation of nuclear energy is a delicate and complex task. Scientific and political reasons account for this.

A first set of complications arises out of the very nature of nuclear energy. Radiation affects both human health and the natural environment. It operates on a time scale that goes beyond the lifespan of individuals, extending in time to entire generations. While significant progress has been made in exploring the effects of radiological contamination on living organisms and the ways these are produced over time, causality remains problematic, since there can be a significant lapse of time before such adverse effects emerge and become detectable. This complicates the setting up of risk assessment procedures and liability regimes for compensation of nuclear damage.

Another set of complications relates to the relative ease with which nuclear materials can be used for both peaceful and military purposes. Indeed, assuming a state possesses a certain degree of know-how, such conversion is relatively simple and can even occur within the same installation. An increasing number of states have access to nuclear technology, used, for example, in a variety of applications in agriculture, health, and environmental remediation. Most states are, however, precluded from using this technology to acquire nuclear weapons. This sometimes results in tensions between the international community, desirous to ensure that nuclear materials are not diverted from peaceful applications and used for the development of nuclear weapons, and individual states, resentful of a control they perceive as attempting to limit their national sovereignty and reduce their defense options.

The catastrophic potential of nuclear energy demands extreme safety measures. In this context, however, safety oftentimes becomes synonymous with secrecy, hence the reluctance of states to provide access to facilities where nuclear materials are used and/or stored. Same reluctance applies to the supply of information to the public in general. While the entire edifice of international environmental law is based on the concepts of transparency and accountability, nuclear regulation remains one of the last sectors in which information to the public is still relatively restricted.

2. International Legal Framework

The current (2002) international nuclear legal framework dates back to 1955, when the General Assembly of the United Nations established the Scientific Committee on the Effects of Atomic Radiation (UNSCEAR). A year later, in 1956, the International Atomic Energy Agency (IAEA) was set up. In 1957, two more international bodies were created: the European Atomic Energy Agency (EURATOM), as part of the system of the European Economic Communities, and the Nuclear Energy Agency (NEA) of the Organization for Economic Cooperation and Development (OECD). These are also the main institutions that exercise competence in the field of nuclear regulation. In this context, another organization should also be mentioned, the International Commission on Radiological Protection (ICRP), an NGO set up in 1928 as a Commission linked to the International Congresses of Radiology. While conceived at first as an independent body to formulate recommendations relating to protection in medical radiology, its field of competence has widened to include all aspects of protection against ionizing radiation. As such, it issues recommendations based on general principles of radiation protection and is collaborating closely with the IAEA, which is the only global international organization with competence in the field of nuclear energy.

The IAEA's mandate contains three fundamental objectives: to help ensure nuclear safety worldwide, to help prevent nuclear weapons proliferation, and to enhance the contribution of nuclear technologies towards meeting the needs of its member states. According to its statute, "the Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health, and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used in such a way as to further any military purposes." Accordingly, the two principal sectors of the Agency's work are controlling nonproliferation of nuclear weapons and promoting nuclear safety.

The legal basis for controlling nonproliferation of nuclear weapons is provided by the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), in force since 1970, and extended indefinitely in 1995. Under this treaty, states that do not possess nuclear weapons commit not to acquire any and accept the obligation to conclude safeguards agreements with the IAEA covering all their peaceful nuclear activities. The purpose of these safeguard agreements is to ensure that states are abiding by their obligation to use nuclear energy for peaceful purposes. To this effect, non-nuclear-weapons states are concluding formal agreements with the IAEA by which they accept to have IAEA inspectors visiting their nuclear facilities and controlling the whereabouts of nuclear material under their control, confirm physical inventories of nuclear material, inspect surveillance equipment. etc. The five nuclear weapons states (USA, France, UK, China,

and the Russian Federation) convene under the NPT to undertake negotiations in good faith toward nuclear disarmament and, while not obliged to conclude safeguards agreements with the IAEA, have agreed that IAEA safeguards may apply to all or part of their civil nuclear activities. Thus, the IAEA creates a system of nuclear accountancy that traces all types of nuclear materials and ensures that none is diverted into creation of nuclear weapons. At the same time, because of the transparency established with safeguard agreements, confidence is enhanced that states do abide with their international commitments relating to nuclear containment and gradual disarmament. Promotion of nuclear safety is achieved mainly through adoption of legally binding agreements bearing on three basic aspects of nuclear energy: physical protection of nuclear materials, nuclear safety, and management of nuclear wastes. Although the IAEA is not an international regulatory body, strictly speaking, it is instrumental in fostering international cooperation and brokering adoption of international agreements. To this effect, the IAEA is working closely with its member states and with other international organizations, such as the Food and Agriculture Organization (FAO) and the International Maritime Organization (IMO). It also issues technical recommendations, circulars, and guidelines, which, though not legally binding per se, are generally adopted by its member states and are considered to reflect the state of art guidelines on the subjects they regulate.

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Biographical Sketch

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