

**Joint Statement by the U.S. Department of Energy
and State Atomic Energy Corporation ROSATOM
on Strategic Directions of U.S.-Russian Nuclear Cooperation**

With the entry into force of the Agreement between the Government of the United States of America and the Government of the Russian Federation for Cooperation in the Field of Peaceful Uses of Nuclear Energy (123 Agreement), a new era has begun that offers significant opportunities to expand cooperation between our two countries on a broad range of areas in civil nuclear energy, scientific and technical cooperation, and nuclear security. In light of these new opportunities, the U.S. Department of Energy and the State Atomic Energy Corporation ROSATOM (hereinafter “the Participants”):

Express their solidarity with Japan in view of the tragedy that has befallen that country and note that the nuclear power plant accident at Fukushima-Daiichi signals a pressing need for the international community to join forces to continue to pursue high standards of nuclear safety and global emergency response;

Recognize in this regard the importance of the Deauville Declaration signed on May 27, 2011, which outlines commitments in the field of nuclear safety made by G8 leaders and underscores their determination to draw lessons from the nuclear accident in Japan, including the necessity to promote high levels of safety consistent with the principles of the Convention on Nuclear Safety, and to consider upgrading norms and standards of nuclear safety and strengthening the Convention on Nuclear Safety and the Convention on Early Notification of a Nuclear Accident;

Recognize the role of the IAEA in the process of strengthening nuclear safety, emergency preparedness, and radiation protection of people and of the environment worldwide, and stress the importance of the Declaration adopted in Vienna at the IAEA Ministerial Conference on Nuclear Safety on June 20, 2011;

Recognize that the nuclear energy and nuclear security cooperation between our countries is based on a strong foundation of agreements and dialogue and that the Nuclear Energy and Nuclear Security Working Group under the U.S.-Russia Bilateral Presidential Commission continues to serve as the forum for developing a broad range of cooperation in these areas;

Recognize that our countries have together actively and consistently demonstrated leadership in the nuclear sphere, particularly in the areas of nuclear disarmament, nonproliferation, and counterterrorism;

Intend to support enhanced cooperation in the areas of peaceful uses of nuclear technology, commercial nuclear activities, nuclear security, energy, and science.

New Areas of Cooperation in Civil Nuclear Energy and Nuclear Safety

The Joint Statement by President Barack Obama of the United States of America and President Dmitry Medvedev of the Russian Federation on Nuclear Cooperation, issued July 6, 2009, notes that the United States and Russia share a common vision of the “growth of clean, safe, secure and affordable nuclear energy for peaceful purposes.” In light of the accident at Fukushima, this commitment takes on even more vital importance. Therefore, in addition to the three key areas identified by the Participants for bilateral civil nuclear energy cooperation, as outlined below, we have now added a fourth topic, nuclear safety research, to that list:

- Reactor Demonstration Projects;
- Research and Development for Innovative Nuclear Energy Technology Options;
- Global Civil Nuclear Energy Framework Development; and

- Nuclear Safety Research.

The Participants note that under these four key areas the two countries could undertake joint projects not considered previously. Now is the time for collaboration on areas of potential scientific and technical cooperation, such as: the development of nuclear fuel cladding that does not produce hydrogen in emergency situations; the exploration of severe accident models; the development of a variety of reactor types, including the Russian multi-purpose fast research reactor; study of applications of fast reactors to advanced fuel cycles; development of small- and medium-power reactors; assessment and possible development of innovative nuclear power technology including new types of reactors, such as wave reactors, or a joint pilot high temperature, gas-cooled reactor power plant; and the improvement of nuclear fuels and construction materials. In the area of Innovative Nuclear Energy Technology, the Participants are planning to work jointly on modeling and simulation, nuclear fuel development, back end technologies, and materials development.

The Russian Federation has established the International Uranium Enrichment Center and placed a reserve of low enriched uranium (LEU) there. This effort is part of the initiative set forth by the President of the Russian Federation calling for a global nuclear power infrastructure to ensure equitable access to nuclear energy for all interested countries subject to compliance with non-proliferation requirements. The United States has established the U.S. Assured Fuel Supply. These, along with the IAEA Fuel Bank, form the basis for a broader set of international fuel services.

The Participants recognize the need to draw lessons from the accident at the Fukushima Daiichi NPP, to enhance knowledge of nuclear safety and radiation protection, and to strengthen standards in nuclear safety, emergency preparedness

and response as well as radiation protection of people and the environment. In this regard, the Participants, in the framework of the Nuclear Energy and Nuclear Security Working Group, intend to expand the existing dialogue on these topics. Initially, discussions are expected to focus on upgrades at existing reactors already completed or planned and how those upgrades would impact reactor performance under the scenario of a severe accident and station black out conditions. They also expect to discuss criteria for the comprehensive risk and safety assessments and an exchange of information in this area. The Participants intend to invite the appropriate bodies to exchange results of “stress tests” of their respective power plants.

Commercial Cooperation

The Participants underline that the 123 Agreement which entered into force in January 2011 and the 2008 Amendment to the Russian Suspension Agreement (RSA) create new commercial opportunities for nuclear energy development in both countries. For example, the Russian uranium supplier TENEX has already signed long-term contracts with U.S. utilities. The deliveries of Russian uranium products under these contracts are expected to demonstrate over the next decade the high level of cooperation between companies of the two countries after the HEU-LEU Agreement is completed in 2013. Cooperation between companies of the two countries can be further enhanced by U.S. and Russian companies having the opportunity to supply nuclear technology and services to the Russian and U.S. markets.

The Participants recognize that additional efforts are needed to finalize as soon as practical the Administrative Arrangement to the 123 Agreement.

The Participants also recognize that, while being mindful of safety, security and nonproliferation, a common vision for the sustainable development of global

nuclear power can guide future cooperation. Appropriate government roles, such as policy, legal, regulatory, and funding, as well as the key elements of a public-private partnership, including the Comprehensive Nuclear Fuel Services concept, should be considered in promoting such development.

Used Nuclear Fuel and Radioactive Waste Management

Used nuclear fuel and radioactive waste management as well as resolution of environmental issues remain priorities for cooperation, particularly in a world in which the use of nuclear energy is expanding. U.S.-Russian cooperation can provide vital contributions to global waste management, including:

- approaches to decommissioning of specific radioactively contaminated sites, including options for final on-site isolation or confirmation of safe release to the public;
- technical solutions related to decommissioning of radioactively contaminated sites (such as special engineering barriers or clean-up of contaminated ground from radioactive and toxic elements);
- research on new technologies to improve NPP used fuel management;
- other research that may be used to assure long-term public and environmental safety at nuclear legacy sites (site monitoring of environment, subsurface contamination modeling, etc.).

Security Cooperation

The United States and Russia actively and consistently demonstrate leadership in the nuclear security sphere, particularly in the areas of nuclear disarmament, nonproliferation, and counterterrorism. The two countries are working jointly on a number of projects aimed at ensuring nuclear security and, where possible, reducing stockpiles of plutonium.

Both countries have shut down all reactors producing weapon-grade plutonium and have brought into force an agreement committing each country to dispose of at least 34 metric tons of weapon-grade plutonium—enough for thousands of nuclear weapons. In addition, our two countries have entered into consultations with the IAEA on arrangements designed to enable the IAEA to independently monitor U.S. and Russian plutonium disposition under the agreement. Plutonium disposition is targeted to begin in 2018.

In addition, a joint program on material elimination has successfully downblended over 425 MT of Russian HEU—enough for thousands of nuclear weapons—and has supplied the United States with the resulting LEU. This is an unparalleled contribution to global nuclear security. A joint pilot project to eliminate excess nuclear material (not from weapons) has successfully identified and downblended almost 15 MT of Russian HEU to date.

Our two countries also continue to repatriate HEU research reactor fuel from third countries. The Participants note the successful return of Russian-origin HEU fuel from a number of countries, including Romania, Libya, Poland, Ukraine, Belarus, Hungary, the Czech Republic, and Serbia, as well as U.S.-origin HEU fuel from Turkey, Taiwan, Japan, and Israel. Additional returns of U.S.- and Russian-origin HEU fuel are planned. The Participants intend to conduct joint efforts to convert research reactor cores in third countries from HEU fuel to LEU fuel, and examine the feasibility of converting U.S. and Russian HEU research reactors to LEU fuel in order to encourage other countries to take similar steps.

The Participants confirm their intent, within their authority, to expand efforts to combat illegal trafficking of nuclear material and radioactive substances. The Participants are developing a detailed, collaborative work plan in the area of technical nuclear forensics.

The Participants recognize that export controls are critical to prevent the illicit acquisition of nuclear material, equipment, and technology that can be used for non-peaceful purposes. To facilitate the implementation of UN Security Council Resolution 1540, they intend to continue to arrange training for experts from third countries on the control and identification of nuclear exports.

Realizing the importance of coordinating emergency response measures, the Participants intend to develop a joint methodology to ensure adequate preparedness for and response to radiation accidents/incidents, and expect to hold joint exercises on emergency response.

The Participants intend to continue collaboration in the field of physical protection, control and accounting of nuclear material, including upgrades at nuclear reactors and other high-risk nuclear facilities, such as material storage facilities, and in the exchange of best practices. They intend to use their experience to assist, where feasible, other countries that are developing nuclear power.

The Participants also cooperate in a number of international security efforts. For example, under the G8 Global Partnership the United States and Russia implement projects to prevent the proliferation of weapons of mass destruction. They also initiated and currently serve as co-chairs of the Global Initiative to Combat Nuclear Terrorism.

The Participants are pleased that the fifth revision of the IAEA Member State document on the "Nuclear Security Recommendations on Physical Protection of Nuclear Material and Nuclear Facilities," Information Circular 225, was published in February 2011. In the future, the Participants intend to continue upgrading physical protection systems at nuclear sites and work to assure their long-term sustainable operation.

Scientific Cooperation

In the Department of Energy-Rosatom Joint Statement on nuclear cooperation from June 8, 2011, which provides for collaboration between institutes and national laboratories, the Participants committed to initiate consultations to establish a framework to support the expansion of interaction between U.S. and Russian nuclear laboratories, institutes, and sites, on a broad range of scientific and technical topics. Such scientific cooperation would support all activities above as well as contribute to expansion of scientific knowledge. The Participants express their interest in conducting research and development on innovative technologies, including modeling, new fuels technology, nuclear safety, used fuel and waste management and remediation, materials, and other areas as appropriate. They see many opportunities in the development and joint use of experimental capabilities utilizing the unique facilities located at the laboratories and institutes of the two countries.

The Participants indicate their readiness to explore joint work on the following areas of potential scientific and technical cooperation:

- conducting joint experiments and tests, including irradiation of construction materials and nuclear fuels at U.S. and Russian experimental and/or test facilities;
- conducting joint activities in the physics of plasmas using experimental and/or test plants in both countries;
- supporting national and international efforts on the nonproliferation of nuclear weapons, including measures on safeguards, security, and related issues; and,
- conducting fundamental and applied research, including in the areas of high-energy density physics, materials science, computational methods and techniques, and other areas of pulsed power, laser, and nuclear science.

The Participants maintain that the Nuclear Energy and Nuclear Security Working Group remains an effective coordination mechanism for joint activities. They further state that the agenda of U.S.-Russian cooperation in the field of peaceful uses of nuclear energy is not limited to the areas, tasks, and missions listed above. The Participants intend to work together on other new ideas, concepts, and projects, including those that address broad international cooperation.

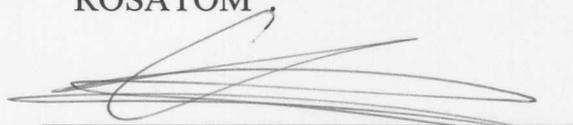
Signed at Vienna, in duplicate, this 20th day of September, 2011.

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