

Information Circular

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General Distribution

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Communication Received from the United States of America Concerning Its Policies Regarding the Management of Plutonium

1. The Secretariat has received a letter dated 13 October 2010 from the Permanent Mission of the United States of America to the IAEA in the enclosures of which the Government of the United States of America, in keeping with its commitment under the Guidelines for the Management of Plutonium (contained in INFCIRC/549¹ of 16 March 1998 and hereinafter referred to as the “Guidelines”), and in accordance with Annexes B and C of the Guidelines, has made available annual figures for holdings of civil unirradiated plutonium and the estimated amounts of plutonium contained in spent civil reactor fuel as of 31 December 2009. The Permanent Mission of the United States has also communicated in its letter that there have been recent changes in its plutonium and fuel cycle policy to replace the statement, and has included a Revised Plutonium and Fuel Cycle Policy Statement provided with the report submitted by the United States for 2007.

2. In light of the request expressed by the Government of the United States of America in its note verbale of 1 December 1997 concerning its policies regarding the management of plutonium (INFCIRC/549 of 16 March 1998), the enclosures of the letter of 13 October 2010 are attached for the information of all Member States.

¹ A modification to this document was issued on 17 August 2009 (INFCIRC/549/Mod.1)

**ANNUAL FIGURES FOR HOLDINGS
OF CIVIL UNIRRADIATED PLUTONIUM**

(ANNEX B, INTERNATIONAL PLUTONIUM MANAGEMENT GUIDELINES)

National Totals

As of 31 December 2009
[Previous year's figures in brackets]
Rounded to 100 kg plutonium
Quantities <50 kg reported as such

1. Unirradiated separated plutonium in product stores at reprocessing plants.	0	[0]
2. Unirradiated separated plutonium in the course of manufacture or fabrication and plutonium contained in unirradiated semi-fabricated or unfinished products at fuel or other fabricating plants or elsewhere.	<0.05 MT	[<0.05 MT]
3. Plutonium contained in unirradiated MOX fuel or other fabricated products at reactor sites or elsewhere.	4.6 MT	[4.6 MT]
4. Unirradiated separated plutonium held elsewhere.	49.3 MT	[49.3 MT]
(i) Plutonium in lines 1-4 belonging to foreign bodies.	0	[0]
(ii) Plutonium in lines 1-4 held in locations in other countries and therefore not included above.	0	[0]
(iii) Plutonium in lines 1-4 which is in international shipment prior to its arrival in the recipient State.	0	[0]

Note:

Lines 3 and 4 together list 53.9 metric tons of separated plutonium that has been declared as excess to national security needs. This, in addition to 7.6 metric tons of the plutonium included on lines 1 and 3 of Annex C, constitute the total of 61.5 metric tons of government owned plutonium that the United States has declared as excess to national security needs.

**ESTIMATED AMOUNTS OF PLUTONIUM CONTAINED IN
SPENT CIVIL REACTOR FUEL**

(Annex C, International Plutonium Management Guidelines)

National Totals

As of 31 December 2009
[Previous year's figures in brackets]
Rounded to 1000 kg plutonium
Quantities <500 kg reported as such

1. Plutonium contained in spent fuel at civil reactor sites.	520 MT	[501 MT]
2. Plutonium contained in spent fuel at reprocessing plants.	0	[0]
3. Plutonium contained in spent fuel held elsewhere.	12 MT	[12 MT]

Notes:

Line 1 includes 0.1 metric tons of formerly government owned plutonium that was transferred to civil reactors and subsequently irradiated. Line 3 includes 7.5 metric tons of government owned plutonium estimated to be remaining in spent fuel that has been declared as excess to national security needs. These, in addition to 53.9 metric tons of separated plutonium reported in lines 3 and 4 in Annex B, constitute the total of 61.5 metric tons of government owned plutonium that the United States has declared as excess to national security needs.

Plutonium and Fuel Cycle Policy Statement of the United States of America October 2010

Fuel Cycle Research and Development

The current policy on the civil use of nuclear power in the United States is based on a once-through fuel cycle involving the irradiation of low enriched uranium fuel in light-water reactors and the subsequent storage and eventual disposal of spent nuclear fuel in one or more geologic repositories. However, to enable continued and expanded use of nuclear power, the United States will pursue technology solutions to better manage used fuel. The United States continues to seek to eliminate, wherever possible, stockpiles of separated civilian plutonium and, where separated plutonium stocks exist, to ensure that they are subject to the highest standards of safety, security, and international accountability. The United States seeks to develop new options for the recycling of used fuel that do not separate pure plutonium, while at the same time minimizing security and proliferation risks.

In April 2010, the Department of Energy submitted to Congress a “Nuclear Energy Research and Development Roadmap” describing its path forward to expand the use of nuclear energy as a low-carbon energy supply and an important part of a strategy to reduce greenhouse gas emissions. The Roadmap’s research and development objectives include: (1) technologies to improve the reliability, sustain the safety, and extend the life of the existing power reactors; (2) improvements in the affordability of new reactors; (3) the means to achieve sustainable nuclear fuel cycles; and (4) the enhanced understanding and minimization of nuclear proliferation and terrorism risks.

While the Roadmap and its objectives apply mainly to the domestic use of nuclear energy, the United States and foreign colleagues are also seeking to expand nuclear power throughout the world and are working together to help provide “cradle-to-grave” fuel services for nations without the necessary resources, while assisting in the establishment of the necessary infrastructure for the safe and secure use of nuclear energy.

Waste Management

The Nuclear Waste Policy Act of 1982, as amended in 1987, affirmed the Federal Government’s responsibility for the disposal of high-level radioactive waste and established the scientific, regulatory, and funding framework supporting the selection of a site for and development of a geologic repository.

In 2009, the U.S. Department of Energy announced that the Yucca Mountain site in Nevada was no longer under consideration for a geologic repository. While other generic alternatives are now under consideration, Secretary Chu has appointed the Blue Ribbon Commission on America’s Nuclear Future to evaluate and provide recommendations on future nuclear policies regarding, in particular, the “back end” of the fuel cycle. Based on their recommendations and other factors, the Secretary will then determine the future nuclear policies to be followed, including legislative changes as needed.

Plutonium Declared Excess to National Security Needs

The United States has declared 61.5 metric tons (MT) of plutonium (as reported in Annexes B and C) as excess to national security needs. This is an increase of 9 metric tons of plutonium, which was announced by Secretary Bodman at the IAEA General Conference in September 2007. The majority of this plutonium was formerly part of the nuclear weapons production process. A small amount of the 61.5 MT of excess plutonium will be disposed of at the Waste Isolation Pilot Plant (WIPP) located near Carlsbad, New Mexico, but the majority of the material will be disposed of as spent fuel through the irradiation of mixed oxide (MOX) fuel under the Plutonium Disposition program. Out of the 61.5 MT, the United States is proceeding with plans to dispose of at least 34 MT of weapon-grade plutonium by fabricating it into MOX fuel and irradiating it in commercial light-water nuclear reactors. Irradiating the MOX fuel would achieve what is generally understood to be the "spent fuel standard," in which excess plutonium is made as inaccessible and unattractive for retrieval and use in nuclear weapons as the plutonium in spent nuclear fuel from commercial reactors. The additional 9 MT of plutonium declared excess in 2007 is also available to be disposed of using this approach, pending certain environmental and legal reviews.

The Plutonium Disposition program involves the construction of three major facilities at the Department of Energy's Savannah River Site in South Carolina. One facility will convert weapon-grade plutonium from metallic components into an oxide powder. The second facility will fabricate nuclear fuel assemblies suitable for use in commercial reactors. The third facility, the waste solidification building, will process waste from the other two facilities into a cement form. With this approach the United States is seeking to convert the material into the form of spent fuel to reduce the risk of its theft or re-use in nuclear weapons, thereby helping to ensure the irreversibility of the arms reduction process.