



International Atomic Energy Agency  
**INFORMATION CIRCULAR**  
*(Unofficial electronic edition)*

**INF**

INFCIRC/549/Add. 6  
31 March 1998

GENERAL Distr.  
Original: ENGLISH

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## **Communication Received from Certain Member States Concerning their Policies Regarding the Management of Plutonium**

1. The Secretariat of the IAEA has received a note verbale, dated 8 January 1998, from the Permanent Mission to the IAEA of the United States of America in the enclosure of which the government of the United States of America, in keeping with the commitment of the United States of America under the Guidelines for the Management of Plutonium (contained in INFCIRC/549 of 16 March 1998 and hereinafter referred to as the "Guidelines"), makes available information on its national holdings of civil unirradiated plutonium and of plutonium contained in spent civil reactor fuel, as of 31 December 1996, in accordance with Annexes B and C of the Guidelines. In the enclosure of the note verbale, the government of the United States of America, in accordance with its commitment under the Guidelines, makes also available a statement explaining its national policy concerning plutonium and the nuclear fuel cycle. In addition, as appendices to the latter statement, two documents have been made available which may be downloaded from the respective URL addresses ("Plutonium: The first 50 years" under <http://apollo.osti.gov/osti/opennet/document/pu50yrs/pu50y.html#ZZO> and "The Department of Energy's Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement" under <http://web.fie.com/htdoc/fed/doe/fsl/pub/menu/any/index.htm>).
2. In light of the request expressed by 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 texts of the enclosures of the note verbale of 8 January 1998 are attached for the information of all Member States.

## ANNEX B

### Annual Figures for Holdings of Civil Unirradiated Plutonium

*(International Plutonium Management guidelines)*

<b>National Totals</b>	As of 31 Dec. 1996 Rounded to 100 kg plutonium Quantities <50 kg reported as such
1. Unirradiated separated plutonium in product stores at reprocessing plants.	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 T
3. Plutonium contained in unirradiated MOX fuel or other fabricated products at reactor sites or elsewhere.	4.6 T
4. Unirradiated separated plutonium held elsewhere.	40.4 T
(i) Plutonium in lines 1-4 belonging to foreign bodies.	0
(ii) Plutonium in lines 1-4 held in locations in other countries and therefore not included above.	0
(iii) Plutonium in lines 1-4 which is in international shipment prior to its arrival in the recipient State.	0

## ANNEX C

### Estimated Amounts of Plutonium Contained in Spent Civil Reactor Fuel

*(International Plutonium Management guidelines)*

#### National Totals

As of 31 Dec. 1996  
Rounded to 1000kg  
plutonium  
Quantities <500 kg  
reported as such

- |  |         |
|--|---------|
| 1. Plutonium contained in spent fuel at civil reactor sites. | 274.4 T |
| 2. Plutonium contained in spent fuel at reprocessing plants. | 0       |
| 3. Plutonium contained in spent fuel held elsewhere.         | 12.8 T  |

#### Notes:

As specified in guidelines, the treatment of material sent for direct disposal will need further consideration when specific plans for direct disposal have taken concrete form.

Line 3 includes certain plutonium in spent fuel that was originally generated in defense applications, but which has since been declared as no longer required for defense purposes.

# **Plutonium Policy and Fuel Cycle Statement of the United States of America December 1997**

## **Overall Policy**

The United States does not encourage the civil use of plutonium and, accordingly, does not itself engage in plutonium reprocessing for either nuclear power or nuclear explosive purposes. The United States, however, will maintain its existing commitments regarding the use of plutonium in civil nuclear programs in Western Europe and Japan. This position is based on the U.S. assessment that the civil use of plutonium is not economically justified and that such use poses non-proliferation risks not commensurate with its benefits. Moreover, the United States seeks to eliminate wherever possible the accumulation of stockpiles of plutonium, and to ensure that, where separated plutonium exists, that it is subject to the highest standards of safety, security, and international accountability.

## **Fuel Cycle Policy**

The peaceful 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 the spent fuel without reprocessing. The United States' ability to pursue its policies on the civil use of plutonium could be diminished if it has no credible, long-term strategy to manage its own fuel cycle. There is a fundamental agreement among advanced nuclear states to pursue deep geologic disposal as the long-term solution to their high-level nuclear waste management strategies. To this end, the United States is evaluating a site at Yucca Mountain, Nevada for its suitability as a geologic repository for the permanent disposition of nuclear waste, including conventional light water reactor and plutonium based spent fuels.

Within the framework of our fuel-cycle policy, the United States supports cooperative, technical development activities with the U.S. electric industry to maintain nuclear energy as a viable energy option. For nuclear energy to remain a viable option for electricity production, plants must be safe, reliable and cost-effective. The United States seeks to continuously improve the safety, reliability and cost-effectiveness of current and future nuclear power plants. To this end, the U.S. Government intends to work with industry to improve nuclear power plant reliability and availability and has supported the licensing and certification of advanced once-through light-water reactors that can be available early next century. As a valuable source of electricity that does not release carbon dioxide or hazardous air emissions, nuclear power will remain one component of the United States' portfolio of options to reduce greenhouse gas emissions.

## Materials Excess to Defense Needs

The United States has declared 52.5 tons of plutonium excess to defense needs. The majority of this plutonium was formerly part of the nuclear weapons production process, but has been determined in excess of defense requirements. The United States has declared that this material will never again be used in nuclear weapons. As part of this pledge, the United States is committed to put this material under International Atomic Energy Agency safeguards as soon as practicable. Table I lists the location of plutonium declared excess to defense needs in February 1996.

*Table 1*

### Plutonium declared excess to defense needs (In Metric Tons)

Location	Weapons Grade Plutonium	Non-Weapons-Grade Plutonium
Hanford, WA	1.7	9.3
Idaho Falls, ID	0.4	0.3
RFETS, CO	11.9	0.0
Savannah River, SC	1.3	0.6
Pantex, TX	21.3	0.0
Argonne National Lab - West, ID	0.0	3.6
Los Alamos National Lab, NM	1.5	0.4
Other	0.1	0.1
<b>Total by Type</b>	<b>38.2</b>	<b>14.3</b>
<i>Total Excess Plutonium: 52.5</i>		

## **Disposition of Excess Plutonium**

Aside from its basic fuel cycle activities, the United States is pursuing a unique, hybrid strategy to dispose of plutonium that is excess to U.S. defense needs. Under this program, the United States plans to immobilize plutonium in ceramic material surrounded by vitrified high-level waste and may burn some of the surplus plutonium as mixed oxide (MOX) fuel in existing, domestic reactors. Both approaches would achieve the "spent fuel standard," in which surplus 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 United States is committed to ultimate disposition of both vitrified plutonium and spent MOX fuel through deep geologic disposal.

The MOX/reactor approach would not involve reprocessing of spent fuel. The excess material has already been separated, and the United States is now seeking to convert the material back into the form of spent fuel to reduce the risk of its diversion or re-use in nuclear weapons, thereby helping to ensure the irreversibility of the arms reduction process. Consistent with the U.S. policy of not encouraging the civil use of plutonium, the U.S. MOX-related facilities would be built and operated subject to the following strict conditions: construction would take place at a secure DOE site; operations would be limited exclusively to the disposition of surplus weapons plutonium; and the MOX-related facilities would be shut down at the completion of the plutonium disposition mission. The use of MOX for this unique disarmament mission does not represent a change in the U.S. position on the civil use of plutonium, and it should not be interpreted as a sign that the United States is revisiting its current policies on plutonium use. The Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement is attached to this policy statement as Appendix A.

Appendix B of this statement is a copy of the U.S. Department of Energy's 1996 report, "Plutonium: The First 50 Years" and represents a desire by the United States to be as forthcoming as possible regarding its past, current, and future plutonium and fuel cycle policies.

## **Total Inventories**

Although not explicitly required by the International Plutonium Management Guidelines, this statement also provides historical information about past plutonium production by the U.S. Government for military purposes, much of which has now been declared excess to defense needs as described above. In 1996, the U.S. Department of Energy released a document entitled, "Plutonium: The First 50 Years" detailing the first 50 years of plutonium related production. The document covers the period from 1944 until 1994, the latest date for which complete information is available and has been declassified. The document is attached as Appendix B to this policy statement and is meant to encourage other states to make full, complete and comprehensive declarations about past plutonium production and use.