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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 7 August 2002 from the Permanent Mission of the United States of America to the IAEA in which the Government of the United States, in keeping with its commitment under the Guidelines for the Management of Plutonium (contained in INFCIRC/549 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 an annual statement of its national holdings of civil unirradiated plutonium and of plutonium contained in spent civil reactor fuel, as of 31 December 2001. The Permanent Mission of the United States has also communicated in its letter that there have been changes in their plutonium and fuel cycle policy since their last statement was submitted, and have additionally included a policy statement in the enclosures of the letter.

2. In the light of the request expressed by the United States 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 letter of 7 August 2002 are attached for the information of all Member States.

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

(Annex B, International Plutonium Management Guidelines)

National Totals

As of 31 December 2001
[Previous year's figures in brackets]
Rounded to 100 kg plutonium
Quantities <50kg reported as such

1. Unirradiated separated plutonium in product stores at reprocessing plants.	<u>0</u>	[<u>0</u>]
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.	<u><0.05 MT</u>	[<u><0.05 MT</u>]
3. Plutonium contained in unirradiated MOX fuel or other fabricated products at reactor sites or elsewhere.	<u>4.6 MT</u>	[<u>4.6 MT</u>]
4. Unirradiated separated plutonium held elsewhere.	<u>40.4 MT</u>	[<u>40.4 MT</u>]
(i) Plutonium in lines 1-4 belonging to foreign bodies.	<u>0</u>	[<u>0</u>]
(ii) Plutonium in lines 1-4 held in locations in other countries and therefore not included above.	<u>0</u>	[<u>0</u>]
(iii) Plutonium in lines 1-4 which is in international shipment prior to its arrival in the recipient State.	<u>0</u>	[<u>0</u>]

Note:

Lines 3 and 4 together list 45 metric tons of separated plutonium that has been declared as excess to national security needs. This, in addition to 7.5 metric tons of the plutonium included on line 3 of Annex C below, constitute the total of 52.5 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 2001
[Previous year's figures in brackets]
Rounded to 1000 kg plutonium
Quantities <500kg reported as such

1. Plutonium contained in spent fuel at civil reactor sites.	<u>363 MT</u>	[<u>343 MT</u>]
2. Plutonium contained in spent fuel at reprocessing plants.	<u>0</u>	[<u>0</u>]
3. Plutonium contained in spent fuel held elsewhere.	<u>12 MT</u>	[<u>12 MT</u>]

Notes:

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. This, in addition to 45 metric tons of separated plutonium reported in lines 3 and 4 in Annex B above, constitute the total of 52.5 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
June 2002**

Current civil uses of nuclear power in the United States are 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 nuclear fuel without reprocessing. The open fuel cycle is safe, environmentally responsible, and, when combined with effective domestic and international safeguards, proliferation-resistant. However, continued use of nuclear power may be predicated on improved economics and sustainability, which in turn may require consideration of different fuel cycles. The United States continues to seek to eliminate wherever possible the accumulation of stockpiles of separated civil plutonium, and to ensure that, where separated plutonium stocks exist, they are subject to the highest standards of safety, security, and international accountability.

Fuel Cycle Research and Development

The May 2001 National Energy Policy Report (NEPR), developed by the National Energy Policy Development (NEPD) Group recommended that, "in the context of developing advanced nuclear fuel cycles and next generation technologies for nuclear energy, the United States should re-examine its policies to allow for research, development and deployment of fuel conditioning methods (such as pyroprocessing) that reduce waste streams and enhance proliferation resistance. In doing so, the United States will continue to discourage the accumulation of separated plutonium worldwide." The NEPR also recommended that the United States consider, in cooperation with international partners with highly developed fuel cycles and a record of close cooperation, developing reprocessing and fuel treatment technologies that are cleaner, more efficient, less waste-intensive, and more proliferation resistant. Accordingly, the U.S. Department of Energy (DOE) is planning to reexamine research, development and deployment of fuel conditioning methods.

DOE has initiated three Research and Development efforts that will examine and help to develop nuclear technologies consistent with the direction of the NEPR. The "Nuclear Power 2010" and "Generation IV Nuclear Energy Systems" initiatives are aimed at making possible the commercial deployment of new nuclear plants that offer advantages in the areas of economics, safety, waste minimization and proliferation-resistance. Advanced fuel cycle research offers the prospect of producing additional power from the fissile material in spent fuel while significantly enhancing the capacity for waste storage in a repository and avoiding the accumulation of additional separated plutonium.

Plutonium Declared Excess to National Security Needs

The United States has declared 52.5 metric tons of plutonium (as reported in Annexes B and C as excess to national security needs. The majority of this plutonium was formerly

part of the nuclear weapons production process. A small amount of the material 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 MOX fuel under the Plutonium Disposition Program.

Of the plutonium declared excess to defense needs, the United States is proceeding with plans to dispose of 34 metric tons of separated plutonium. Under the plan, excess plutonium from disassembled nuclear weapons, and other programs, would be processed into mixed oxide (MOX) nuclear reactor fuel and then irradiated in commercial nuclear reactors. Subsequently, the fuel would be removed from the reactors and eventually disposed of in a geologic repository. This approach 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 program will involve the construction of two facilities at the Department of Energy's Savannah River Site in South Carolina. One facility will convert plutonium from metallic components into a plutonium oxide powder. The second facility will fabricate nuclear fuel pellets suitable for use in commercial reactors from plutonium-uranium oxide. Construction of the MOX facility would begin in FY 2004.

Eliminated from an earlier plan was an additional option to immobilize plutonium by vitrifying it with high-level radioactive waste. This concept added cost to the overall program but was judged not to offer commensurate benefit. The bulk of the material previously destined for immobilization will be converted to MOX fuel.

The irradiation approach for disposition of excess plutonium would not involve reprocessing of spent fuel. This plutonium was separated long ago, and the United States is now seeking to convert the material back 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. 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 excess weapons plutonium; and the MOX-related facilities would be shut down at the completion of the plutonium disposition mission.

Waste Management

The United States is in fundamental agreement with other advanced nuclear energy states to pursue deep geological disposal as the long-term solution for high-level nuclear waste management. Permanent Geologic Disposal is the national radioactive waste management policy as mandated by the Nuclear Waste Policy Act (NWPA). On February 14, 2002, U.S. Secretary of Energy Spencer Abraham forwarded his recommendation to the President, based on approximately 24 years of research, that Yucca Mountain, Nevada, is suitable for development as the nation's geologic repository for spent nuclear fuel and high-level radioactive wastes. The President affirmed this

recommendation and forwarded it to Congress on February 15. Both Houses of Congress have ratified the President's determination. The State of Nevada is pursuing legal remedies. Key regulatory standards to protect public health and the environment at the repository also have been promulgated in the past year.