APPENDIX 4

Efforts to place excess military fissile materials under international controls

(July 30, 1998)

Material	Quantity (in tonnes)	Location(s)	Safeguard status	Comment
United States				
Plutonium	2	Hanford and Rocky Flats	Under voluntary IAEA safeguards.	Weapon-grade and non-weapon-grade metal and oxides in non-classified forms.
	15	Hanford, Rocky Flats and Savannah River	Offered for safeguards in 1997. May be subject to IAEA verification developed through the Trilateral Initiative.	Weapon-grade and non-weapon grade metal and oxide, mostly in unclassified forms; to be consolidated at Savannah River
	33	various DOE and DOD sites	To be subject to IAEA verification developed through the Trilateral Initiative.	Mostly weapon-grade metal in classified forms (pits and components).
Plutonium Subtotal	**50**			
HEU	10	Oak Ridge	Under voluntary IAEA safeguards.	Weapon-grade metal in non-sensitive forms.
	13	Portsmouth	Offered for safeguards in 1996; downblending of HEU to LEU verified by the IAEA	Downblending of non-weapon grade HEU to LEU completed in 1998.
	13	Oak Ridge and Portsmouth	Offered for safeguards in 1996. IAEA verification of storage and down-blending to occur upon transfer to commercial processor in 1998–99.	Metal at Oak Ridge; oxide at Portsmouth. Downblending to LEU to be completed by 2003. First part of 50 tonne transfer to USEC.

Material	Quantity (in tonnes)	Location(s)	Safeguard status	Comment
United States, (cont.)				
HEU (cont.)	37	Oak Ridge	Offered for safeguards in 1997. IAEA verification of storage and downblending upon transfer to commercial processor.	Metal at Oak Ridge is mostly in classified forms. Transfer to USEC for downblending to be completed by 2003. Second and final part of 50 tonne transfer to USEC.
	38	Various	Available for future offer; type of safeguards (ie., voluntary offer, verified downblending, verification developed through the Trilateral Initiative) to be determined.	Metal, fuel elements and oxide to be transferred to the Tennessee Valley Authority by as early as 2000.
	45	Various	Available for future offer; type of safeguards (ie., voluntary offer, verified downblending, verification developed through the Trilateral Initiative) to be determined.	Mostly classified metallic forms. Most commercialization is not expected before 2010.
	18	Various	Available for future offer; type of safeguards (ie., voluntary offer, verified downblending, verification developed through the Trilateral Initiative) to be determined.	Likely to be processed and disposed of as waste.

HEU Subtotal 176

U.S. Total 226

Material	Quantity (in tonnes)	Location(s)	Safeguard status	Comment
Russia				
Plutonium	up to 50	Various	To be subject to IAEA verification developed through the Trilateral Initiative.	Materials from dismantled nuclear weapons that are to be placed under international controls as they become "available through the nuclear disarmament process."
HEU	up to 500	Various	Downblending of HEU to LEU monitored by U.S. inspectors; LEU available for IAEA inspections at eligible U.S. facilities. Through mid-1998, 40 tonnes had been downblended.	Materials from dismantled nuclear weapons that are to be placed under international controls as they become "available through the nuclear disarmament process."
Russia Total	up to 550			
United Kingdom				
Plutonium	4.4	Various	Placed under Euratom safeguards.	Includes 0.3 tonnes of weapon-grade material.
U.K. Total	**4.4**			

Sources: "Breakdown of U.S. Excess Materials Availability for IAEA Inspection to Date," Office of Arms Control and Non-Proliferation," Department of Energy (undated fact sheet; probably 1997); "Commercial Nuclear Fuel from U.S. and Russian Surplus Defense Inventories: Materials, Policies and Market Effects," Energy Information Administration, Department of Energy, May 1998, esp. table 5; "Megatons to Megawatts Program—Progress Status as of May 1998," U.S. Enrichment Corporation; and "Supporting Essay No. 5," *Strategic Defense Review,* Ministry of Defense of the United Kingdom, July 1998.

APPENDIX 5

U.S., Russian Military Stocks of Highly Enriched Uranium (in tonnes)

End of	Total stocks; average 80 percent U 235	Weapon-grade equivalent
1994*	2,030	1,750
1995	2,024	1,744
1996	2,012	1,732
1997	1,985	1,706
1998**	1,974	1,697
Future* **	1,356	1,150

* These central estimates are from Plutonium and Highly Enriched Uranium 1996. Uncertainty is about 20 percent. Drawdowns in subsequent years reflect amounts of HEU blended down to LEU by Russia and the United States.

** As of July 1998.

*** Future estimates reflect the U.S. government commitment to withdraw highly enriched uranium (HEU) from its military inventory as well as Russia's commitment to blend down HEU (assumed to be all weapon-grade uranium) into low-enriched uranium. The two countries have committed to lowering their stocks by about 547 tonnes of weapon-grade uranium equivalent (or about 618 tonnes of HEU of various levels of enrichment). The schedule is uncertain, but disposal is expected to occur before 2020.